DOCUMENT RESUME

ED 414 167 SE 060 838

AUTHOR	Jickling, Bob, Ed.
TITLE	A Colloquium on Environment, Ethics, and Education (Whitehorse, Yukon, Canada, July 14-16, 1995).
INSTITUTION	Yukon Coll., Whitehorse.
ISBN	ISBN-0-9694150-1-X
PUB DATE	1996-00-00
NOTE	170p.
AVAILABLE FROM	Arts and Science Division, Yukon College, Box 2799, Whitehorse, Yukon Y1A 5K4, Canada.
PUB TYPE	Collected Works - Proceedings (021)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	Conservation (Environment); *Ecology; Economic Research; Elementary Secondary Education; *Environmental Education; Epistemology; Ethical Instruction; Ethics; Foreign Countries; Futures (of Society); Habitats; Institutional Evaluation; *Interdisciplinary Approach; Learning Activities; *Philosophy; Relationship; Story Telling; *Values Education; Wildlife
IDENTIFIERS	Canada; *Deep Ecology; Ecopolitics; Environmental Awareness; *Environmental Ethics; Environmental Literacy; Wolves; Yukon (Whitehorse)

ABSTRACT

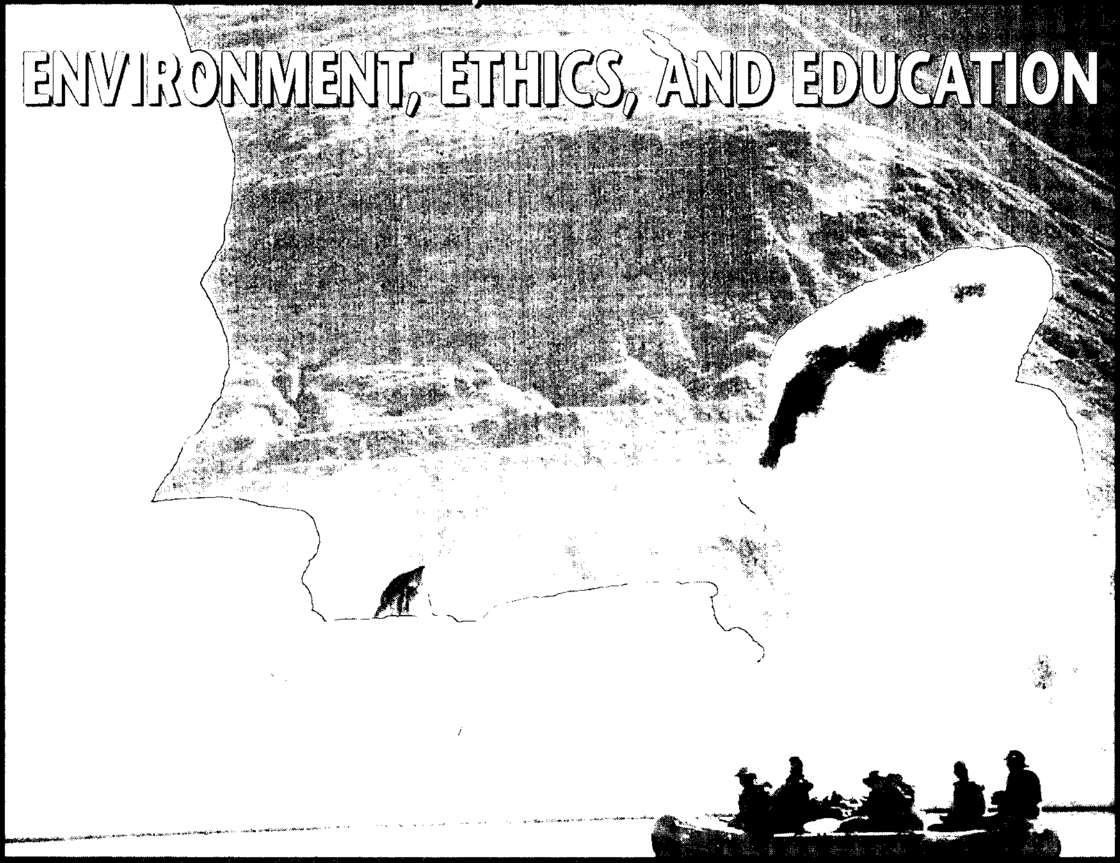
The papers in this proceedings explore two themes: "what environmental ethics can do for teachers," and "what teachers can do for environmental ethics." The papers are: "A Colloquium on Environment, Ethics, and Education: Considering the Context" (Bob Jickling); "Planning for the Future: Workshop Observations and Recommendations" (Colloquium Participants); "Welcoming Remarks" (Shirley Adamson, et. al.); "Transferring Wisdom through Storytelling" (Louise Profeit-LeBlanc); "The Role of Socially Evolved Ideals in Environmental Ethics Education in Canada and the Yukon: A Historical Approach Involving the Humanities" (Eugene C. Hargrove); "What Is a Good Way To Teach Children and Young Adults To Respect the Land? (A Panel Discussion)" (Lucy Wren et. al.); "Relational Modes of Knowing: Learning Process Implications of a Humane and Environmental Ethic" (David Selby); "Sacred Land" (Jim Cheney); "An Unwanted Story" (Martha McMahon); "Environmental Education, Liberatory Education and Place-Sensitive Narrative" (Val Plumwood); "The Role of the University, Scientists, and Educators in Promotion of Environmental Literacy" (John Lemons); "Professionalization and Environmental Education: Are We Guarding against Charlatans or Losing the Passion?" (Marilyn MacDonald); "Environmental Education as Values Education: A Critical Framework" (Pamela Courtenay Hall); "Instead of Environmental Education" (Anthony Weston); "Wolves, Ethics, and Education: Looking at Ethics and Education through the Yukon Wolf Conservation and Management Plan" (Bob Jickling); and "Directions for the Future: Environmental Education in British Columbia" (Rick Kool). (AA)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 414 167

a colloquium on

ENVIRONMENT, ETHICS, AND EDUCATION



PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

B. Jickling

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

EDITED BY BOB JICKLING

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ERIC
Full Text Provided by ERIC

BEST COPY AVAILABLE

A Colloquium on
Environment, Ethics, and Education

Proceedings of a colloquium held to explore the themes

What environmental ethics can do for teachers
What teachers can do for environmental ethics

Hosted at Yukon College
Whitehorse, Yukon
July 14 - 16, 1995

Edited by Bob Jickling
1996

A Colloquium on Environment, Ethics, and Education
is available from:

Arts and Science Division
Yukon College
Box 2799
Whitehorse, Yukon
Y1A 5K4

© 1996 Yukon College

No part of this publication may be reproduced in any form without the written permission of the publisher. No responsibility is assumed by the publisher for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise.

Canadian Cataloguing in Publication Data

Colloquium on Environment, Ethics, and Education (1995 : Yukon College)
A Colloquium on Environment, Ethics, and Education : proceedings of a colloquium hosted at Yukon College, Whitehorse, Yukon, July 14-16, 1995

Includes bibliographical references.
ISBN 0-9694150-1-X

1. Environmental education—Congresses. 2. Environmental ethics—Congresses. I. Jickling, Bob, 1950- II. Title.

GE5C65 1995 333.7'07 C96-900627-6

Layout Editor: Priscilla Clarkin
Printed with vegetable-based ink on 50% recycled paper containing 20% post-consumer waste.

The production and printing of these proceedings were funded by the Shell Environmental Fund.

FUNDED BY
SHELL
ENVIRONMENTAL
FUND

Printed in Canada.

A Colloquium on Environment, Ethics, and Education
July 14 - 16, 1995

was presented by

Yukon College
Yukon Global Education Project
Yukon Development Education Centre
Yukon Environmental Education Association

Forum Organizing Committee

Bob Jickling, Eleanor O'Donovan, Debbie Gohl

Conference Coordinator

Val Birss

Acknowledgements

We Appreciate Advice and Assistance from

Carol Geddes, Mary Jane Johnson, Norma Kassi, Shari Buchan, Sandy Hobus
Jerry Bradford, Wilmonica Van Bibber, Erik Leslie, Hannah Jickling, Remy Rodden
Bob Kuiper, Susan Klassen, Christine Hedgecock, Lindsay Birss, Janel McIntyre
Laura McIntyre, John Pattimore, Angela Walkley, Nikki Krocker, Custom Caterers
Yukon College Environmental Ethics and Education Students
Moderators and Rapporteurs.
We would also like to thank the many additional people who helped with billeting and other important tasks.

Colloquium Sponsors and Supporters

The organizing committee would like to thank the many sponsors, supporters and providers of in-kind services who made this Colloquium on Environment, Ethics, and Education possible:

Yukon Global Education Project
Yukon Development Education Centre
Government of Canada, Yukon Environmental Action Fund
Government of Canada, Environmental Partners Fund
Shell Environment Fund
British Columbia Ministry of Environment, Lands, and Parks
Yukon College, Academic Studies Division
Yukon College, Women's Studies Program
Mr. Charles Alexander
The Chawkers Foundation
Yukon Women's Directorate
Yukon Innovators
Yukon Environmental Education Association
Parks Canada, Department of Canadian Heritage
Canadian Parks and Wilderness Society - Yukon
Yukon Conservation Society
City of Whitehorse
Guest Speakers, Colloquium Participants, and
all other supporters we may have omitted here.

Table of Contents

Introduction

A Colloquium on Environment, Ethics, and Education:
Considering the Context
Bob Jickling, Yukon College 7

Planning for the Future:
Workshop Observations and Recommendations
Colloquium Participants 8

Opening Session

Welcoming Remarks
Shirley Adamson, Ta'an Kwach'an First Nation
Eleanor O'Donovan, Yukon Global Education Project
Bob Jickling, Yukon College 11

Transferring Wisdom through Storytelling
Louise Profeit-LeBlanc, Native Heritage Advisor,
Yukon Heritage Branch 14

The Role of Socially Evolved Ideals in Environmental Ethics Education in Canada and the Yukon: A Historical Approach Involving the Humanities
Eugene C. Hargrove, University of North Texas 20

First Nations Perspectives

What is a good way to teach children and young adults to respect the land?
A panel discussion
Lucy Wren, Elder, Carcross Tagish First Nation
Marge Jackson, Elder, Champagne and Aishihik First Nations
Harry Morris, Elder, Teslin Tlingit Council
Carol Geddes, Filmmaker of Tlingit & Southern Tutchone ancestory
Daniel Tlen, Yukon Aboriginal Language Services
Norma Kassi, Vuntut Gwitchin First Nation,
International Gwich'in Steering Committee 32

Exploring Relationships

Relational Modes of Knowing:
Learning Process Implications of a Humane and Environmental Ethic
David Selby, International Institute for Global Education,
University of Toronto 49

Sacred Land
Jim Cheney, University of Wisconsin—Waukesha 61

Ecopolitical Dimensions

An Unwanted Story
Martha McMahon, University of Victoria 69

Environmental Education, Liberatory Education and Place-Sensitive Narrative
Val Plumwood, University of Sydney 76

Looking at Our Institutions

The Role of the University, Scientists, and Educators in Promotion of Environmental Literacy
John Lemons, University of New England 90

Professionalization and Environmental Education: Are We Guarding Against Charlatans or Losing the Passion?
Marilyn MacDonald, Simon Fraser University 110

What Then of Environmental Ethics?

Environmental Education as Values Education: A Critical Framework
Pamela Courtenay Hall, University of British Columbia 142

Instead of Environmental Education
Anthony Weston, Elon College 148

Looking to the Future?

Wolves, Ethics, and Education: Looking at Ethics and Education through *The Yukon Wolf Conservation and Management Plan*
Bob Jickling, Yukon College 158

Directions for the Future: Environmental Education in British Columbia
Rick Kool, B. C. Ministry of Environment, Lands, and Parks 164

A Colloquium on Environment, Ethics, and Education: Considering the Context

Bob Jickling, Yukon College

Exactly a year ago *A Colloquium on Environment, Ethics, and Education* was hosted at Yukon College. Images of this meeting remain vivid. It was an exciting time. Risks were taken and questions, many of them difficult, were asked. Have all the important perspectives been represented? Is there an appropriate mix of educators and environmental philosophers? Is there a reasonable balance between theory and practice? These risks were soon put aside, not because we were necessarily correct in our judgements, but rather because of the exceptional group of concerned, caring, and dedicated people who gathered in Whitehorse to explore ideas of much importance.

Other factors contributed to the success of the *Colloquium*. It was timely. Environmental Ethics is increasingly seen as a vital new field and many are looking to this field for insight into environment values and human relationships with the more-than-human world.

The *Colloquium* was also relevant. Our institutions are beginning to acknowledge the role this field has to play in education. For example, the Ministry of Education in the province of British Columbia has recently published a guide called *Environmental Concepts in the Classroom*. In it, environmental ethics is presented as a key component for environmental education. We also have a Yukon example. The recently adopted *Yukon Wolf Conservation and Management Plan* requires on-going research in environmental ethics and curriculum initiatives aimed at enabling students' understanding of ethical dimensions of environmental issues.

Like the *Colloquium*, the papers gathered here are both timely and relevant. They present both an invitation and a challenge. They invite us to consider new possibilities, new ways of approaching environmental education and environmental ethics, and ways to bridge these two fields of inquiry and practice. Many readers will find affirmation — beliefs about environmental ethics and education which are reinforced. The papers also encourage us to reach into new territory, to examine new ideas, and to take new risks.

At the conclusion of the *Colloquium*, a workshop led to a number of observations and recommendations. These have been assembled and printed below. They represent the combined ideas of academics, practitioners, formal and non-formal educators, and interested citizens; they are broadly based. They, like the papers, reveal that we have much work to do, but more importantly, they also provide directions for this work and many foci for our individual and collective journeys.

Finally, I would like to thank my co-hosts, our sponsors, and all of the *Colloquium* participants for the wonderful contributions that they have made. Your presence and efforts were inspiring.

Whitehorse, July 1996

Planning for the Future: Workshop Observations and Recommendations

Colloquium Participants

What can environmental ethics do for teachers?

There can be a large theoretical gap between the field of environmental ethics and the practical world of teachers. The word "ethics" can have multiple meanings which add to this gap and generate uncertainty. For some, the word itself can raise "red flags" — for teachers who do not wish to be accused of preaching, promoting propaganda, or social engineering.

The workshop questions were designed to explore relationships between education and environmental ethics. In answer to the first question, participants offered the following:

- Study of this field can expand teachers' views about what exactly constitutes "environmental ethics."
- Environmental ethics can help to ground teachers in their own moral views and their relationship with the environment. This should aid their teaching of environmental issues, and make them more aware of the moral bases of their own environmental decisions.
- Environmental ethics can aid in the integration of content — integrating relationships between environmental concerns and ecology, aesthetics, history, narrative inquiry, etc.
- Environmental ethics provides a way to encourage critical thinking, alternative ways to look at and resolve problems, and analytical tools for investigating current issues.
- Environmental ethics can encourage openness to change in values/ethics within ourselves as teachers and enable us to see new opportunities.

What can teachers do for environmental ethics?

Teachers play an important role in the lives of young people, guiding their intellectual and social development. While they are not the only agents of change in our society, they are pivotal. They are in a position to lessen the distance, or gap, between the academic world of environmental ethics and the lives of their students. Participants recognized that:

- Teachers are vital to the process. They provide a link between theory and ideas from the field of ethics and their students — between theory and the reality, or context, of students' lives.
- Teachers are a vehicle for the transmission of ethical ideas, but they must also ensure that different perspectives are highlighted.
- We must take care not to alienate teachers and to value the experience and commitment that they bring to the field.

How should environmental ethics be taught?

There were two general categories of response to this question. In framing the first category, a question was posed: "Can environmental ethics be taught, especially when they are still evolving?" Given an evolving sense of ethics, a series of recommendations designed to enable environmental practice was put forward. It is assumed that new environmental ethics will grow out of increasingly careful, or mindful, practices.

The second category acknowledges that environmental ethics is not a body of content that is taught, but rather a process of reflection and analysis in which teachers and students participate. These recommendations reflect a belief that students should become involved in this process of inquiry. They also acknowledge that there are political, pedagogical, and epistemological considerations which should be taken into account and roles for students who wish to take action as a result of their enquiries.

Of course these two categories are not mutually exclusive and their interaction provides an important area for future consideration.

To enable environmental practice

- Provide an enabling context where practices and values can evolve. The structures of schooling must start to reflect our evolving values. For example, creativity, thoughtful discussion and debate are often at odds with authoritarian power structures frequently found in public schools.

- Be aware of etiquette in *all* relationships: respect for colleagues, care for tentative voices, etc.
- Foster respect for non-human life forms. Children naturally love the earth, land, and animals. Allow these values to flourish. Provide opportunities for direct experience with the land, the more-than-human world.
- Teach through example; be an active presence. Try to lead a moral life, to exemplify moral values. Be open to looking at nature in new ways — with a sense of wonderment.
- Seek, with students, an understanding of how our basic needs are met, and the impact of our existence, in order to develop respect for animals and plants. Examine our ecological footprints.

To foster participation in the process of environmental ethics

- Environmental ethics is not a separate subject or a body of knowledge, but rather a process, "a thread," that permeates the fabric of our teaching. Environmental ethics can be part of the process of everyday teaching which will help children become confident in exercising their critical thinking abilities and making decisions.
- Environmental ethics is not just a matter for science. Our value systems are embedded in our histories and the stories that we tell. Use of history, literature, and storytelling can be morally instructive and enabling. The study of aesthetics is accessible and has much to reveal about the origins of our values. Art: music, poetry, painting, and sculpture have important roles — both contemplative and expressive.
- We need to challenge students through discussion and the posing of questions.
- Ultimately these challenges will generate a political dimension. Students should be encouraged to examine dominant values, explore alternative perspectives, and consider their own relationships with nature.
- We need to acknowledge that students have personal and private ethics which exist at the intersection of multiple relationships. Ethical critique needs to be presented as a critique of culture rather than of individuals' beliefs.
- Teachers need to be sensitive to the context of their work — urban communities are different from rural communities; southern communities are different from northern communities. There is a contextual element to environmental ethics. It is important to situate ethics in the lives of our students, investigate real issues which are important to those involved.
- Students need to go outside the classroom and learn from experience. They need to experience nature. Cities also provide important experiences.
- Students need to feel important and useful. For example, the *Green Schools* program can provide students with opportunities to be involved with environmental projects. Projects can also be fun. An issues focus can be enabling.
- We need to empower students and help them to realize that they are agents of change. They may consider preferred versus probable futures and critically analyse the options. This may involve group activities and community thinking. They may wish to act upon their considered judgements.
- We need to balance activism with accountability — we need to be accountable and responsible. Be wary of "one-true-story ethics," and carefully consider the role of special interest groups.

What will be required to achieve this instruction?

There is much to do, and there is such a sense of urgency! Some asked: "How much time do we have left to change our ways?" These recommendations can provide some starting points for future reflections, actions, and research:

- There are a number of structural issues that need to be addressed, beginning with schools. Develop a plan to reduce costs and consumption, increase conservation, etc. The school itself should be a model for change.
- Curricula and class time need to be more open and flexible — to work on environmental issues and tease out ethical dimensions, to participate in field experiences, to be involved in participatory or action-oriented projects.
- While the structure of schools and curricula may appear to be long term projects, teachers can begin immediately to affect their own classroom structures and practices. They can move to bring their teaching environments more into line with their beliefs about environmental practice.
- We need to be open and honest. Educators must not be afraid to spell out their own values and the rationale behind their environmental ethics. But, at the same time, they need to be aware of the sphere of their influence. Their task is not to lead students to a preferred ethic,

but to encourage students to evaluate possibilities for themselves. A balance between honesty and potential influence must be found.

- Educators need to examine their own beliefs, and remain open to new possibilities, to make teaching and lifestyle choices which are as consistent as possible with their moral values.
- At the same time, it must be recognized that many teachers despair. They despair over the state of their profession and their ability, within this profession, to make a difference. They need support — from each other and from outside of their profession.
- Action plans should be developed by networks of teachers who are interested in environmental education. Teachers need to be wary of action plans and guidelines which appear doctrinaire.
- In-service opportunities are critical. Creating an environment where teachers themselves can participate as researchers can provide a helpful and collaborative approach to professional development.
- Teachers also expressed a need for support materials, "tools." These included structures, frameworks, and/or techniques for dealing with controversial issues. They also expressed a need for topical material for in-class use. Background material about local case studies would be helpful. For example, edited collections of newspaper clippings which reflect a range of community values would be useful.

The above observations and recommendations are a reflection of the thoughts and discussions of colloquium participants. They represent a moment in our journey towards better practices and ever-more-thoughtful enquiries.

Welcoming Remarks

Shirley Adamson,
Ta'an Kwach'an First Nation

When the sun is shining as it is today, we know the daughters of Sun are walking amongst us. They travel to earth on the rays of Sun.

It happened one time that one of the Sun's daughters travelled to earth and saw a young man that she fell in love with. It happened that the young man was married, but the love of the Sun's daughter was strong. She returned to petition her father to allow her to live on earth with the man.

She went back home to her father and said, "I want to stay."

"Live on earth, going back and living there?" he says, "No, you belong here, he belongs there, he has got a wife, he has got a family. I can just not have that." But she cried and she wept and every tear from a child's eye, if you are a parent, falls right in your heart, but you cannot make life miserable for the ex-wife. "You have to bring this guy to me and I will have to lay down some rules as to how you ought to live together." One of the conditions was that his new son-in-law would not have anything to do with his ex-wife.

So the Sun's daughter came to earth and stayed with us and was relatively happy. But the jealousy that prevailed in the ex-wife's heart just would not let her rest. She strategized constantly to try to get this guy. She was successful one time in placing herself in his path going to get water. She jumped out of the woods and said what she had to say to him, but the Sun, keeping an eye on his daughter would have none of it. He was angry, he called his daughter home and said, "I told you not to have anything to do with these people. They hurt your feelings, they embarrassed you, they embarrassed me and they embarrassed themselves." In his anger, he began to burn all of creation.

She begged and pleaded, this young woman, because she loved her husband; she loved his family. Finally she convinced the Sun to stop, but to this day when archaeologists and other people go out, they see that layer they see — that layer of ash when the sun was angry.

These stories are told to us as aboriginal people as we were growing up. Mind you I heard them in Southern Tutchone and they sound a lot better, but they take days to tell. There are different lessons to learn in these stories and often as we grow up we find different lessons or see the stories differently.

Stories like this explain a little bit of what is required of you. There are a lot of stories that have information that help us to track the movements of the stars and constellations, that explain why one of the front shoulders and arms of the beaver are shorter than the other. To understand the stories is to understand why we have to treat animals with various acts of respect — because of the power they hold and different ways that we have to approach the environment.

We have a responsibility as individuals to the environment and to others around us and to humanity. It is a very important responsibility that some of us have lost touch with. I think that conferences such as this will benefit us in getting in touch with what individuals, raised with traditional values, never questioned. Very rarely do Elders speak or share information without contributing information to someone else. That is how they verify it, by passing on their own personal knowledge. They pass it on because that is what they are, they hold the information for a while then pass it along. That is how we managed without the benefit of written language. We were able to maintain views — knowledge that we gathered and kept over centuries.

Through all of our teachings we were taught our responsibilities to maintain the environment, because we are maintaining ourselves. Often our Elders tell us that we are "part of the land, part of the water." We look at it throughout the years differently, and we expect that we *are* all "part of the land part of the water," because when the land suffers, or when the water suffers, our culture suffers as well.

A lot of the stories that are told belong to different peoples in the Yukon. They do not necessarily belonging to me or my people, but are universal stories and they have lessons. I should give you a little background on aboriginal people in the Yukon. We are the original peoples of this Territory. We have always known that — from our stories, our languages, our songs, — we all have a need to know that. When we begin to deal with other people who are interested in the history of the Yukon, we are finding that what we were listening to in the stories and the songs is basically what we have heard through newer scientific methods.

Within Yukon there are various language groups: we have Southern Tutchone, Northern Tutchone, Tlingit, Kaska, Han, Loucheux and Tagish. We are a matrilineal society, so when the names and the stories come to us they come through our mothers or grandmothers in our clan. Because my mother was a Wolf, my grandmother was a Wolf and I am a Wolf. In the middle of my creational territory, when I am standing here, I know, without a doubt, that off in this way is Takina and off in this way is Sima and off in this way is Nalin. You guys know Grey Mountain? Grey Mountain is *The Ma* which means Rock Mountain. I thought you guys knew where Sima was, but you gave the ski hill the wrong name — Golden Horn and Sima. The reason why we call it Sima is because we get rock there and we use that rock to make the pigment for our paint. The direct translation is Red Mountain, however, the English name of Mount Sima means "Mount Red Mountain."

The mountain that you see as you start to go towards Haines Junction, as you get close to Takhini, when you see the Takhini River off to your right as you are driving north. There is a mountain by itself known as "look-out," it is Nalin. In the early days that is where we looked out, looked up and down the river when we knew that the Tlingits were coming. We said right away to the Champagne-Aishihik people who were scattered throughout their territory, we sent the signal that went on to Burwash. To us it was very important and we know the names and we know the history, then we know our responsibility.

I am here because I am a member of the Ta'an Kwach'an. Ta'an is the Southern Tutchone name for what you guys know as Lake Labarge today. It means interchangeably "head of the lake" or "flat lake place." This is where we come from, Labarge people. And *Mun* is the Southern Tutchone name for lake. Kwach'an is "the people" as opposed to one person. We are part of the much larger nations of people — and relationships to the Tagish-Carcross people are very strong. Through to Labarge over to Hutshi, through that chain of lakes over to Aishihik, up into Burwash and we all remain Southern Tutchone. We call ourselves Southern Tutchone, but in our own ways we call ourselves Ta'an.

Once you start to learn these little things about us, whether or not they make sense at this time should not worry you, once you begin to understand what our life means, why we need certain things, certain places by certain names, and why we treat animals in high degree the way we do, you begin to understand the under-currents to our values. That is what we need from you. We need to start to understand each other a little more than we have in the past.

Almost without exception, the original people of the Yukon speak English. Very few non-aboriginal people speak one of our languages and we have to get beyond that in order to communicate. I do not speak for any other group except the Ta'an Kwach'an Council, but I want to acknowledge that we share this territory with another First Nation, the Kwanlin Dun who are very close relatives to ourselves as well. And their name derives from our name for the water that flows through Miles Canyon — *Chu* water moving rapidly — that's what it is. Many of our Elders this evening are attending a potlatch. On behalf of all the people in this area and Ta'an Kwach'an Elders and the leadership and Ta'an Kwach'an chief, I do acknowledge your presence here and your work and hope that over the next couple of days that you can get outside. I know there is a need for walks and I want you to know that in walking on tracks, you are walking on the trails of my ancestors, gazing on the same mountains that they gazed. You will be drinking the same waters from the same water-ways that they drank in. I hope you will begin to appreciate why we are so desperately making every effort to join forces with everyone to try and preserve what we had, so that we can leave something as good as, if not better than, what we had. I hope that it goes well over the next couple of days.

Eleanor O'Donovan,
Yukon Global Education Project

On behalf of the Global Education Committee of the Yukon Teachers' Association, I would like to welcome all of you to this Environmental Ethics Colloquium. We are very pleased to see that so many local educators are interested in this topic. We would particularly like to welcome the many presenters who have joined us from southern Canada and the United States., as well as Australia. It is clear from their presence that the issues to be discussed are of international importance.

The Global Education Project, which is jointly sponsored by the Canadian International Development Agency, the Yukon Department of Education, and the Yukon Teachers' Association, has as its primary aim the continuing infusion of a global perspective into the curriculum presented in our public schools. This aim is based on an awareness that as citizens of a small and fragile planet we need to understand the increasing interconnections both within and between economic, environmental and social systems. An understanding of these interconnections is essential if our young people are to play a positive role in shaping the future.

To bring about a positive future for all living things on this planet we need also to help our young people examine their attitudes and values so that they may critically evaluate their own actions, as well as those of others, as they relate to important issues. This is no easy task for educators. Therefore we welcome this opportunity to open the dialogue on environmental ethics between academics in our universities and teachers in our public schools. Sharing insights and debating these issues is a very important step in our progress in this field.

We are anticipating many excellent presentations and debates over the next few days and expect that we will all take away new insights to challenge us to deeper awareness in this important area of education.

Bob Jickling, Yukon College

Greetings, both to those of you from the Yukon and to those who have traveled to be with us. In organizing this colloquium, we have enjoyed an enthusiastic response from guests, speakers, participants, and many others concerned with environment and education issues. For this reason we believe that this gathering is timely.

There have also been recent initiatives that give prominence to environmental ethics. These include a British Columbia Ministry of Education vision statement, *Environmental Education Concepts in the Classroom*, and the recently adopted *Yukon Wolf Conservation and Management Plan*. Interestingly, this *Plan* requires curriculum initiatives aimed at enabling students' understanding of ethical dimensions of environmental issues.

While environmental ethics has been identified as an important curricular item, much work remains before widespread implementation of this ideal can be realized. This colloquium seeks to contribute to this implementation process by bringing specialists in environmental ethics and education together with teachers, educators, and other interested citizens. We hope that you find it interesting, challenging, and stimulating.

During an earlier visit to Whitehorse, Gene Hargrove pointed to the gap which exists between scholars and practitioners. He said:

> Although philosophers have produced quite a few theories about environmental ethics, especially since 1986, there is a large gap between theory and practice. . . . Getting beyond this impasse requires considerable interaction between those who make theories and those who make decisions. . . . Moral change usually takes place at the level of practice. It is, at most, clarified at the level of theory. . . . Ultimately, the form environmental ethics takes in any particular place on this planet will be determined by those who use it rather than those who theorize about it.
>
> Whitehorse, November 1993

Clearly, much remains to be done before environmental ethics shape, and are shaped by, practitioners.

We encourage all colloquium participants to take advantage of opportunities for interaction. In planning this event we have asked speakers to limit their comments to 30 minutes to leave time for discussion. We have arranged for rapporteurs to record the flavour and details of the discussions. And a working session is scheduled for Sunday afternoon. You are also encouraged to make the most of breaks, lunches, and Saturday's supper for informal conversations.

There will be gaps between the various perspectives that will be represented. We, therefore, encourage you to be patient when encountering challenges and to seek creative and common understandings about the nature of our theories and practices.

Enjoy yourselves and welcome to this colloquium at Yukon College, and thank you for coming.

Transferring Wisdom through Storytelling

Louise Profeit-Leblanc, Native Heritage Advisor, Yukon Heritage Branch

At the beginning of this presentation, the author comments to her audience about the importance of preparation for speaking, a traditional trait of the Northern Tutchone.

First of all I noticed on the agenda that an Elder has been asked to open this session with a prayer. I love going to these gatherings and being able to touch base with the Elders, for it is they who give the younger generation the go ahead to say what we have to say. It is to them that we all owe a great sense of gratitude and appreciation. When I was younger, an Elder from Mayo by the name of Lucy Peter took me aside and instructed me in the correct way of addressing people in a large gathering. Part of the instruction was to ensure that prayers were offered first. This, she said, would ensure that nobody's feelings got hurt, and that everyone would leave the meeting with good feelings towards one another because they had treated each other with respect and with good intentions.

When first being asked to give this presentation, it occured to me that the First Nations voice is not heard enough. It is through this voice which constantly makes reference to the land, that anything that I will say will begin to make sense. Stories of a time of the past connect us with a lifestyle and culture which we no longer are in touch with. They are the medium through which I will attempt, to make sense of it all.

I would like to thank all those people who have worked hard to bring us all together in this colloquium. Now I know from looking it up in the dictionary what a "colloquium" actually is! I found it intriguing that a colloquiam basically means "in or of talk"; in other words, familiar speech or "talk-speak" if we can coin it as that! A place where people come to learn by listening and speaking with each other about the subject at hand.

Looking at the title of this colloquium, "Environment, Ethics, and Education," the first thing that came to mind when reflecting on the word "environment," which I'm sure is similar to a lot of other First Nations people's way of thinking, is that to which the people are closest to and that is, of course, the land. Another way of looking at the environment is to consider it to be like your mother. If we take care of our mothers in the same way we take care of the land, then we will be in a lot of trouble! Many First Nations people refer to the land as their mother. Now, as we all know a mother is forever giving, no matter what. More often a father is more stern and holds back in his giving, but the mother is always giving, nourishing and caring. The word itself, tends to make it foreign to some people's way of thinking. According to traditional understandings the land is not separated from us as human beings; we are a part of it, and it is an extension of us.

And what is "ethics." How is this term being used in the context of this conference? I'm afraid that even after I looked it up in the dictionary, it still wasn't clear. Over the years in my life and now even more so, now that I am a grandmother, the true meaning of the word has come to mean, that which we do to enoble us. What makes us noble? How do we carry on our lives so that in the end, we will have accomplished what the Creator wanted for us? What do I do everyday to prepare myself to become that creature which the Creator wants me to be? Ethics has to do with this particular virtue. It also has to do with upright living and making moral decisions based on this goal of being noble in our everyday activities.

"Education"? Well, I have thought forever about this subject. Having had some bad experiences in the education system that we have today has biased my opinion, but hopefully this will not hold me back from saying what I think has to be said about *other* means of education. I believe that education is how we live our lives and how you live with everything around you. Everything in existence teaches us something about life. Even the smallest minute thing in the world, the atom, teaches us a lot. If you split this atom, you will find the energy of a sun. Think about this for a minute. Everything around us educates us, how we interact with the land, minerals, trees, sky, animals, everything, even our thoughts. Our thoughts too can become a force, for we are in charge of them.

This was to be an oral presentation, but the coordinator wanted the transcripts printed so that the presentations of the colloquium could become part of a publication. This was difficult but I have managed to get some of my thoughts down on paper, and hopefully the recorders can also tape the stories which I will be using to compliment my other comments.

To begin, it is important for me to preface my talk to say that I speak only for myself and not for others. I also speak in honor of my ancestors and hope that I will do them justice. In the words of one of my dear Elders who just recently passed away, "we should live our life just like a story, so that when we go they will tell a good story about us!" The Elders from Mayo have always encouraged me to live right. Live a spiritual life. Once when I was very involved with Indian politics and was getting burnt out, I visited an Elder from Mayo. Lucy Peter told me at that time that when a person gets "Cho" on the end of their name then that depicts your place in your community. It informs others that you have acquired a certain amount of life experience and knowledge, and now it is time for you to give it away. She always reminded me that I was never to think that I was too smart for the Creator, and that I should ever bear in mind that He is in charge of everything. She told me of her husband who was a very small man. "Do you think that he could have killed a bear with his bare hands if he didn't trust in the power from God? It's Him. He gives us strength and knowledge." It was then that she instructed me to never forget to open meetings with a prayer. This I have learned serves a two-fold purpose. One, it helps us to tap into that inner strength and higher power, and second, it brings us together in one spirit to help one another and to move forward as one. If any of you have the opportunity to attend a First Nation's gathering, you will always find this to be the case, and it is usually the Elders who are given the responsibility to open the session with a prayer.

When I first started to work in the schools to teach students about Yukon legends and mythololgy, the teachers were a little apprehensive at my suggestion of beginning with a prayer. They are getting used to it now! So how does all this preamble relate to the subjects we are going to cover this weekend? It is my conclusion that the most important and the foremost environment which we should consider and be ever cognizant of, is our own spiritual environment. We are spiritual beings. This is not just our bodies and minds meeting here, but our spirits. It is important that we get in touch with each other on this level and develop some feelings for each other and the topic at hand. Through storytelling I have been able to achieve this sensitivity and to aid students in determining emotional aspects of the stories and to hear the inner meaning of the stories, not just the words.

Do we ever ask ourselves what we are doing here at this time and why we are with each other today? The answer can best be described by a great teacher of our time, Abdu'l Baha, who said, "You are where you are not by your own will, but by the will of the Creator, for your own development and the development of those around you." We are all here because we are committed to something, and our primary environment is within each of us. This is our first environment to consider, the first environment for which we should busy ourselves, as it is the only one for which we have total control. How we treat each other as human beings is usuallly reflected in how we treat our outer environment. So, if we treat ourselves well and with respect then this is how we will eventually treat our environment. The traditional teaching is that we are all one another's helpers. We are interdependant. If one member of our community is suffering, then the whole community is also suffering. If one is flourishing then this too impacts on the wellness of that community.

Growing up with the traditional teachings has taught me that the community is not there to serve our every need, but that we should learn how to serve others. It has often been a shock to see children who do not know that they should be respectful and give up their chair for an older person who has come into a room. Many children today get quite miffed if we make the suggestion to them that they should do such a thing. "They have walked longer that you on this earth, and they deserve to rest now" are the words of our Elders. Today the common knowledge of equality of children does not sit right with me. It's not that children don't count or don't have a say, it's just that they have to earn their place in society, and while they are still young have to develop a greater sense of respect and appreciation for their Elders.

Let me now share with you a story which takes place in the Blackstone River district in northern Yukon, up the Dempster Highway. This is the homeland of the Takudh Gwichin. There are three groupings of Gwichin, the Tatlit Gwichin who inhabit the Arctic Red River and Fort McPherson region of the NWT, the Takudh Gwichin from the Blackstone and the Vuntat Gwichin from Old Crow. Apparently years ago the other two groupings always wanted to marry into the Takudh as they had skills the other two didn't have. These skills were acquired simply because they had the resources to develop them. Examples of these would be tools for hunting, caribou corrals, toboggans, snowshoes, etc.

This story is from the Gwichin, and I offer it in honor of an old friend of mine, Mr. Joe Netro. He shared this story with me during a time in my life when I was having a lot of personal problems and struggles. It was a tough time for me as I was still young and inexperienced. Over a cup of tea while I was visiting with him and his wife, Hannah, he started to tell me this story.

A long time ago, there was an old man and woman. This couple lived alone. Now you might think this unusual in a traditional community, but the reason that they lived alone in their old age was that the woman was barren and could never have children. Well, this winter came really fast. Everything froze solid, the lakes, the river and there was so much snow that even the berries got covered up. And the caribou even took a different trail that year to avoid the storms of their homeland. So the people had no meat or fish. There was nothing. The land was just blowing snow and ice, and the couple was starving. The woman was in worse shape than her husband. Her eyes were sunken, her belly was swollen, and even the soft spot on the top of her head was sunken in. She was in pretty bad shape. Her husband was starving too, but he was not in such bad shape. He was very worried about her though. Every morning they would say prayers and beg the Creator to give them some food to tide them over until spring. Everyday the old man would go out hunting and return with nothing.

Now on this certain day, the couple had offered their prayers, and the old man realized that if he didn't get anything soon his wife was going to die. Her image was firmly implanted in his mind's eye as he trekked out on the land that day. The wind was howling and blowing over the barren land of rock and ice. The only thing that was out there that day was a small bird, a chickadee, or what most people refer to as a Canadian Jay or camp robber. That's all that was out there, on the land, that day. Now the man wondered if it was the right thing to o, to kill this bird for food, because according to tradition, this bird is the hunter's helper."

When I was a young girl, my grandmother would make me put out chunks of fat out for these particular birds. She would make me do this in the fall just before hunting season. "You hear that guy? He's says, 'Gimmee fat, gimmee fat!' You have to feed him so he can bring moose to us. He's our helper that guy!"

Now this was the same bird and the man is trying to decide what to do, when he remembers his wife's starving condition. He takes an arrow out of his quiver; the type of arrow which has a blunt end.This is the kind of arrow head which was used for killing birds. The old man takes careful aim and takes the bird down. Carefully he places it into his packsack, all the while giving thanks. Quickly he walks back to his camp to share the good news with his wife.

"The Creator, he took pity on us today, look what I have here!" He showed his wife his catch and she, proceeds to clean and prepare the bird for cooking. She made soup. It has been said that if you are starving, it is not wise to eat solid foods, but to start off slowly, eating soups and drinking tea first; later you can eat a little solid foods. So this is what they did. They drank the soup, and the husband ate a little meat so he could have the strength to go out the next morning. "Let's put this one away for tomorrow," the old woman told her husband. She carefully wrapped the little drumsticks up and put them away in her food cupboard.

The next morning the old woman awoke a little stronger. As they were offering prayers, she was thinking about what a good man her husband was and hoping he was going to get something on his hunt today. Just as he was going out the door, she stopped him.

"Hey, you better take these drumsticks here, you need your strength!"

"No! you better keep it and make more soup, you need it more than me. Look at you!"

They argued about this, but finally the man just went — without the food.

It was only a short distance away that he came up upon two moose, a cow and her two year old calf. The old man was excited, but calmed himself to take careful aim. He got both of them. He started to clean them, but in his weakened state the only things that he could manage to take home were the kidneys and the hearts. These are delicacies for old people and are usually the first things that are eaten when they take a moose or a caribou.

His wife was so happy! She proceeded to prepare the kidneys and the heart for cooking. It smelled so good! She was looking forward to drinking the broth from this preparation. Her husband was just about to dig in when she said, "Just a minute, before we eat this food, we better eat this one." She pulled out the two little drumsticks she had put away the night before. "That's him, he gave up his life for us. He brought us this moose. We got to give thanks and show respect for him." She placed the two drumsticks before her husband. They ate them slowly, together, and reflected on their blessings.

This is the story of good woman.

So let's take a look at this story. What are the lessons which we can glean from this legend? First of all lets look at the couple's relationship. They were a team, one balancing the other, interdependent. Relying on each other for support, even at the point of impending death. The husband saw how his wife was suffering more than he was, so he naturally took up the stronger role to take take of her. The fact that they were alone is another point. In most communities of First Nation's elderly people, grandmothers and grandfathers usually have their children take care of them in their old age. Being alone makes the scenerio even more vunerable, and the determination of the old couple becomes even more evident. Their strong spiritual strength and conviction of faith that something good would come as a result of their suffering is a lesson that we can all apply to our everyday lives in so many ways. So this story is an example of how interdependence went beyond the human to human but also to the interdependence on the spiritual world for assistance. The bird was another level of this interdependence. He was their spirit helper. He was the bringer of game. He also sacrificed himself to ensure their continued existence. Interestingly the old man was put into a position of having to make a decision of whether or not it was wise for him to take the life of this special bird because of it's special relationship with bringing moose and caribou. Sometimes we have to make decisions which require sacrifice.When it will have a significant impact on the well being of another individual, then we must make hard decisions.There is so much in this story and a lengthy analysis could be developed, but what is the most important is left to the listeners themselves. It is within yourself. The same holds true for the storyteller as well. Each time I tell and hear the story it means something else for me, too.

When I go to the schools to tell stories and later have the students ask questions about these stories, the first thing I point out to them is that each person hears the story as they are meant to hear it. Each person sees the scenes in their own way, through their own cultural eyes, and each interpretation is correct for that individual. There is a lot of cultural information in this story, and generally in a class room situation I would go over the instances to clarify for them. For instance, there is the law of not eating solid food if you are starving; the special arrows for hunting birds; the taking of the heart; and kidneys as the special foods, etc. But the main element of the story which should be evident is that of sacrifice, sacrifice on many levels.

So what does a story like this have to do with beginning to understand ethics from a First Nations point of view? To begin with, ethics is closely related to morality, to the way we live with each other and how we interact with all human beings. As I mentioned before, ethics is also tied to nobility and sacrifice. In sacrificing yourself for others, you are sacrificing your own desires, your own needs for the betterment of others. Learning about others' cultures requires a certain amount of sacrifice as well as patience to create better understanding. What might be ethically acceptable by one group of people might not be for others and so on. The main goal however is to find that common road of understanding and tolerance for each other and to learn how to give up what appears to be so important at the moment. This is essential for unity in the community. Learning how to get along is a simple way of putting this point across. We are now living in a society in which many cultures are colliding, and all of us have to make moral decisions about what things to sacrifice. These are interesting times in which to live. Not one group totally understands the other. It will require a lot of work on all of our parts to maintain this relationship, and hopefully in the end we will find that greater common good and a united front for the future.

The next story is one that is very poignant and one which just happened to me recently, one in which I learned about the interdependence on a whole other level. There is traditional teaching which depicts trees as being partners or friends, one to the other. Recently I attended a workshop on how to make birch bark baskets. This was a privilege, and I was honored to be taught by an Elder who drove all the way down from Northway, Alaska to teach us this endangered artform. During the session it became apparent that there is a wonderful relationship between the birch, willow and spruce. Being such good friends, they are interdependent and rely on each other for support and strength. Each one by itself is weak, and is just itself, but when the three are brought together they become something totally different, either a basket, a bowl, a canoe, a babycarrier, a knifecase etc. They become greater than themselves.

The first sacrifice, if you wish, is the willing birch; it sheds its outer bark. The spruce roots are what weaves or sews the piece together, and it must be kept wet or it will crack and break during the construction. The birch must stay dry to create a well made piece. No drops of water should fall on the birch. This shows respect to the birch. The best root is one which grows wild and freely in a sandy spot. Nothing stops it, and it grows long and straight. When taking this root from the ground, one should make an offering as it will assist you to create your piece. Clean it and keep it safe from damage. The last tree which is related to the basket is the red willow. It has a sweet pure smell, and it has flexible but strong qualities which allow it to become the anchor to the whole piece. By surrounding the piece with willow, the craftsperson is able to complete the piece with solidity and form. It pulls it all together.

All three of course are dependent on water: the birch before it sheds its outer bark, the spruce roots while being prepared for lacing, and the willow prior to being utilized for the basket edgings. It was also interesting to realize that the birch was made malleable with heat. In the old days they would use hot charcoals from a campfire, but today we use blow dryers! These instructions show us how important respect and appreciation of certain qualities are, and how, in order to achieve a greater product in the end, we must look to the finer qualities of each one of us, to see how we can become stronger by our interdependence. This brings me to the final subject matter which we are to discuss today and that is of education. As you have heard, the type of education I'm referring to is one which is passed down orally, by word of mouth, and is done by using examples of everyday life. Skills were taught by doing.

I would also like to note that the instructor for the birchbark basket class was so afraid of coming to give us this course, particularily when she discovered that it would be held at the college. She fretted about it for days, but in the end made up her mind to come anyway. All of her students were so glad that she did. Her apprehension was that she thought she was going to be expected to write everything down, and she didn't feel capable of doing this.

She came and gave the course in a very traditional style. She showed us our materials, what we had to work with. Next she showed us how to care for each of the three components; explaining how to get started and the proceeded to just start working on her own basket! We watched, got our own supplies and began to do as she was doing. Watching, listening and doing! Simple! Traditional educational curricula is user-friendly and if resorted to and patiently attended to, could become a vital element of our own educational system today. The most outstanding characteristic of this style of teaching and learning is that the learner is encouraged to always ask questions.

So today we are challenged with many new opportunities for learning, for questioning and learning how to be ever vigilent in our attempts to be respectful of our total environment which includes all living things. Our struggle is to become more mindful, and heedful in how we interact with all living things. This is no small task, and while there is still time we must take up the work of documenting as many of these stories as possible so the next generations can learn from them, so that the knowledge that they contain can be utilized far into the distant future. These stories are the foundations which have been embedded in the territory since the beginning. They have been time-tested and contain such invaluable information that surely it is worth our efforts to record and preserve them for future generations.

The last story I'd like to share is one which is very close to my heart. It takes place between the McQuesten and the Stewart Rivers, the homeland of the Nacho N'yak Dan, the First Nation which I am from. We are referred to as the People of the Big River. The people of those days used to travel extensively and have relatives from the Selkirk, Kluane, Han and Vuntat First Nations. There was also inter-marriage between the people from over the mountains from the Northwest Territories, from the Fort Norman region.

So this story takes place east of the community which is now referred to as Mayo. There are three little lakes there referred to as Reed Lakes. There used to be Northern Tutchone names attached to these lakes, but even the oldest person in the community cannot remember these names. The middle lake is of significance as it was named after an old woman who was a healer, a medicine woman who lived beside this lake. The story I'll now share is in her honor.

The old man who told this story tried very hard to remember the old woman's name but explained that the story was so old that the name had been lost. There was a song that she sang in the story, however, and he remembered that.

There was this old lady. She used to stay between those two Reed lakes, in that middle one. That lady was a medicine lady; she could heal people. She used to use all kinds of plants to make medicine, for the people. She did not live amongst the people but lived by herself. When the people got sick or needed medicine, they would travel to that place to see her or get her to come to their camp. In those days doctors didn't live amongst the people, they had to stay clean and not expose themselves to all the goings on of the people. She was well known to everybody in that part of the country. Now according to the story, this old man's grandfather recollected of the time when he and his family were making their way across country, when they decided to stop and visit the old lady. They discovered that she had a small son.

My grampa, he said, "We don't ask her where she get that baby, that's not our business. We just see she love that little boy very much, that's her real son I guess."

The story was that one day that old lady and her son were walking down on the beach beside that lake and her little son was throwing rocks into the water. Here without any warning a giant, jackfish surfaced and snapped up that boy in his powerful jaws and swam back out into the lake. That old lady screamed with shock after that jack, but he was already gone with that kid. What is she going to do? She calmed herself down and set to work chopping down trees with her little stone axe. She worked very quickly limbing the trees as they came down. Soon she had enough to make several rafts. She wound spruce roots around these logs, wound them tightly so that they would be secure. Quickly now she gathered up all the dry brush which she had limbed from the spruce trees and placed piles of it on the rafts. Near her camp was a pile of fire-rocks which she also piled on the rafts. She was moving as fast as she could go, ever aware of her son being in the stomach of the giant jackfish.

Grabbing her flint and a small clump of dried grass, she started a fire. Quickly now, she constructed a torch of other dried grasses and lit each pile of dried spruce on the rafts, setting them afloat on the lake. Soon the whole lake was ablaze and lit up with the burning rafts, the heat of the burning spruce pitch could be felt even from the shore. The rafts began to burn fiercely and upon burning, the heated rocks began to drop into the lake water causing it to come to a boil. The lake was boiling, steaming, when all of a sudden the giant jack surfaced to the top of the lake, boiled, cooked to death!

Now they say that that old woman she had great powers, so powerful that she could actually fly over the water. She got a strong willow hook and dragged that fish up onto the shore. Moving as rapidly as her little knife would allow, she cut open the stomach of the fish revealing the contents of the stomach. It was too late, the boy's flesh had already been digested and all that was remaining were his bones. Crying, she gently placed all of these tiny bones on a clean moose hide which she had layed out on the ground. Carefully, she wrapped these bones . . . She took up her rattle and began to sing. Half wailing and chanting the old woman sang her songs for three days and nights, not sleeping, not eating or even drinking water. On the fourth morning as the sun was just beginning to rise up over the hill, she opened the bundle and that little boy he came out. Her son came back to life!

They say he's the ancestor to many of the people up that way. So this is the story. The story is the same for us today. We have only the skeleton now. It's now up to us to put flesh on that skeleton; to have a sincere conviction and dedication and be prepared to suffer a little to build a new life, to breathe fresh air into the old ways so that they work for us in this day and age.

Thank you very much for listening to me this afternoon. I hope I have been able to give you some food for thought and hopefully have given you a different perspective on how we can be more responsible, ethically, educationally and environmentally towards the land which we now all call home — the Yukon. Mussi!

Notes on contributor

Louise Profeit-Leblanc is from the Northern Tutchone First Nation whose nation, the Nacho N'y Ak Dun reside in Mayo, Yukon. For the past 10 years, she has worked for the Heritage Branch as their Native Heritage Advisor. Her primary responsibilities include toponymy, oral history, and working as a liason between the department of Tourism and Yukon First Nations. An avid storyteller herself, she is also the co-founder of the annual International Storytelling Festival which was established in 1987. This festival enables her to be involved with storytellers from the Yukon and abroad. Louise is also very involved with the development of First Nations art and presently sits as the chairperson for the Society of Yukon Artists of Native Ancestry (SYANA). She has lectured extensively in the Yukon, southern Canada and Alaska, on the history of Yukon First Nations history utilizing the medium of traditional stories and legends in her presentations.

The Role of Socially Evolved Ideals in Environmental Ethics Education in Canada and the Yukon: A Historical Approach Involving the Humanities

Eugene C. Hargrove, University of North Texas

The problem

The failure of theory and the role of primary and secondary teachers

Environmental ethics, despite a history as an applied field within professional philosophy of more than twenty years, is not a subject that is easily translatable into primary and secondary curricula. There are a number of reasons for this difficulty. The most important of these, as I have discussed earlier,[1] is that there has been a major shift in the way Western societies have come to think about values. This way of thinking is called economic and is a naive blend of three comparatively recent philosophical positions: nineteenth century utilitarianism, turn-of-the-century American pragmatism, and early twentieth century logical positivism.[2] The general problem is that value is now being treated almost exclusively as being instrumental, subjective, emotional, and irrational. Something is valuable if it benefits humans, or if someone wants or desires it in order to achieve a feeling of satisfaction or pleasure. In accordance with this new perspective, most value is considered economic. Those values that are not economic, in the technical sense required by modern economic theory, are considered to be noneconomic values and are typically translated imperfectly into weak economic values. Although this conversion of values into this new form is fully accepted in environmental policy and decision making, it frequently leaves the environmental professionals who apply the technique with a feeling that something important is missing, and it thoroughly confuses ordinary citizens who often find their basic environmental intuitions in conflict with economic environmental values.

To counter this valuational schema, environmentalists have started calling for the recognition of rights for nature. In response, unable to develop a theory of rights for nature,[3] environmental ethicists have developed many variants of intrinsic or inherent value for nature, none of which to date is considered acceptable to environmentalists and their opponents. This focus on the nature of value and its application to natural objects, systems, plants, and animals has remained very theoretical and is therefore not very useful to primary and secondary school educators.

Despite the gravity of the ongoing environmental crisis, it is unlikely that there will be much improvement in the near future in the applicability of environmental ethics research, for it is unrealistic to expect that philosophers, working on their own, will be able to produce inspiring philosophical treatises that will provide adequate practical guidance for the resolution of environmental decision and policy making or serve as the foundation of a new kind of environmental education. Granted, it is not inconceivable that such a philosophy will suddenly appear, but it is dangerous simply to wait for such a miracle to occur. To move forward with environmental ethics education, therefore, it may be necessary for the primary and secondary school teachers themselves to lead the way, and then in subsequent interaction with specialists in environmental ethics gradually improve upon these first efforts.

Educators may respond that it is not possible to teach environmental ethics until the theory is developed and agreed upon, and that asking them to lead the way places a burden on them for which they are not adequately prepared. Teachers may also fear criticism of parents for broaching ethics and value issues in the classroom: that they are indoctrinating rather than teaching. These are not, however, insurmountable problems.

Indoctrination, religion, and family values

While there are no easy answers to these concerns, it is possible to pursue an approach that can reasonably be expected to improve environmental education without requiring teachers to deal with the ambiguities and inconsistencies of competing theories in environmental ethics or engage in activities that border on indoctrination. The teaching of environmental ethics appears to be difficult in large part because it is treated as a new kind of ethics that radically breaks with the past. In accordance with this conception of the subject, environmental values are the recent product of the thought of a relatively small number of environmentalists, for example, John Muir and Aldo Leopold, who are breaking with and reacting against the past. Viewed this way, there is nothing to teach except the professional literature of the past twenty years together with how the views of key figures in the history of the environmental movement contribute to or anticipate that material. The prospects brighten, however, if a broader range of cultural history is taken into consideration. The key figures in the history of environmentalism did not develop their views in complete isolation from their cultural context. This historical context includes the development and evolution of representational painting (culminating in realistic landscape painting and the development of landscape photography as an art form in the nineteen century), landscape gardening, nature poetry and prose, natural history science (including, in particular, biological and geological survey and classification activities), and picturesque travel (now called tourism).[4] There is virtually unlimited material available on these subjects and they can be taught in a noncontroversial manner as history while at the same time providing students with a better understanding of how their environmental values arose and what they mean.

There is a real need for such value education. As I noted at the beginning of this paper, in the twentieth century, it has become increasingly difficult to think in terms of values that are not economic. In environmental policy and decision making, for example, aesthetic value, which is historically a major environmental value, is treated as irrelevant, indeed, unintelligible, until it has been converted into economic terms. Through this conversion, however, it loses its historical or traditional meaning and the beauty of nature becomes nothing more than the cost of travel, food, lodging, and entrance fees. This conversion, as I have noted elsewhere, is comparable to the fictional efforts of Big Brother's government in Orwell's novel *1984* to eliminate the ability of citizens to think in moral terms by eliminating the vocabulary that they need to do so.[5] The problem today is not merely the choice of the appropriate ethical theory, but more significantly, the basic ability of citizens to think morally at all.

Because the economic conception of value has become so well established in public policy, trying to teach alternative environmental values can easily become a walk through a cultural minefield. Teachers are constantly in danger of being accused of teaching students inappropriate values. Traditionally in Western society value training has been regarded as the province of the home or the church. The association of ethics with religion is actually a historical accident. As the Roman Empire collapsed, the Catholic Church took over a variety of roles, including ethics and value education. It is this association that is the basis for fears about fanaticism among radical environmentalists. As a result, the likelihood that teachers will be accused of improper value instruction increases when the value training is presented as new or radical, as a break with traditional values. (Ironically, because the recent economic values are now considered to be traditional, the older values, which actually *are* traditional, are treated as radically new values by the opponents of environmentalism and the defenders of twentieth century economic practice — and this perversion of history is usually even accepted by the environmentalists themselves.)

The idea that values should be taught exclusively in the home is a very ancient view. As Aristotle noted in the fourth century B.C., governments almost universally fail to pay attention to the moral upbringing of their citizens, and "although the best arrangement would be for the regulation of moral matters to be taken over and properly administered by the community, yet inasmuch as the community neglects them it is rightly considered the duty of each of us to help his own children and friends along the road to virtue — or at least to have the will, even though we lack the power, to do this."[6] In the Middle Ages, it could be said that moral education was administered through the community via religious institutions. However, with the secularization of public education in the modern period, we have returned for the most part to the situation that Aristotle was confronting: parents unable or unwilling to provide moral education of a uniform quality, but worried that teachers in public schools will teach their children the wrong values.

Because the idea that ethics is part of religion has been with us now for many centuries and the idea that values should be taught exclusively in the home has been with us for many thousands of years, these ideas are not likely to go away in our lifetimes. There are, however, ways to teach ethics that will reduce potential conflicts with these beliefs. To begin with, ethical training as public education can be clearly and narrowly aimed at furthering the goals of the community — that is, helping students understand generally accepted societal values. This approach need not be in competition with religious value education. It can be treated as complementary.[7]

Concerning possible conflicts with parents, many problems can be avoided by teaching at a level of generality at which there is broad agreement and by not taking sides on issues where a general consensus has not yet been reached. For example, some years ago a parent-teacher association in Georgia in the United States decided that the children in its elementary school needed to receive value education, but not trusting the teachers, the members of the PTA arranged for meetings to instruct the teachers on what they could and couldn't do. Though everyone expected a fight, to the amazement of all, the parents and teachers quickly found that they were in complete agreement. This agreement, though unexpected, should not have been. At the level of generality at which the instruction was to take place, everyone held the same values. To be sure, had the teachers wanted to deal with very controversial issues, such as abortion, there would been considerable disagreement not only between the teachers and the parents but within each group. Even such issues, nevertheless, can be addressed if both sides were fairly treated, they are presented as matters about which we have not yet reached full agreement, and the resolution of the disagreement was left open. If a specific answer is advocated by the teacher with regard to a morally controversial issue, the instruction can easily become ideological indoctrination rather than moral education. If, however, the object of the instruction is to help students understand what proponents of each side are saying, it remains educational, perhaps even a useful contribution to the eventual resolution of the moral issue.[8]

Environmental ethics as environmental citizenship

Much of the stigma attached to ethics can probably be avoided by putting ethics, as social ethics, into a broader context, for example, teaching citizenship instead of morality or ethics. According to Aristotle, for example, ethics and politics (or statecraft) are two sides of the same coin: ethics being the perspective of the individual and politics the perspective of the group.[9] *Citizenship* is a word that bridges these two perspective quite effectively and leads naturally into appropriate environmental ethics literature without the religious overtones associated with *stewardship*. For example, Leopold uses the term *citizen* in his famous essay, "The Land Ethic," where he writes that "a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it."[10] Likewise, Mark Sagoff has developed a distinction between *citizen* and *consumer* and between *citizen preferences* and *consumer preferences* that provides a comparable link between the individual and community perspectives in opposition to the arbitrary new economic values. Sagoff points out that we are not just consumers of products, but also citizens in communities, and that our preferences as citizens can often conflict with and override our preferences as consumers, the preferences that economists survey for policy and decision making.[11] At the practical level, Environment Canada has done much to promote a similar idea of "environmental citizenship," generating a number of short publications that may be useful in primary and secondary education in the Yukon and elsewhere in Canada.[12] According to Environment Canada, "The term 'environmental citizenship' is a convenient way of describing the ethical obligations that link us with other members of the biosphere."[13] It is "an idea that we have responsibilities for the environment."[14] These responsibilities "are rooted in the communities to which we belong," which include the family, local and national communities, the community of all human beings, and "a still broader community, the community of all living things."[15]

Customizing environmental ethics education for the Yukon

A number of environmental ethicists have noted that the purposes of most environmental laws in the United States are defined, at least in part, in terms of lists of values as limits on economic value. [16] For example, the Wilderness Act of 1964, which is supposed "to assure that increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions," includes four values in its definition of wilderness: scientific, educational, scenic, or historical value.[17] The National Environmental Policy Act of 1969 (NEPA), which is supposed to impede "the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and advancing technological expansion," calls for the preservation of "important historic, cultural, natural aspects of our natural heritage," historic, cultural, and natural values, and for the preservation of "esthetically and culturally pleasing surroundings," aesthetic and cultural values.[18] Finally, the Endangered Species Act of 1973 is supposed to protect endangered species by preventing "economic growth and development untempered by adequate concern and conservation" because these species are "of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people."[19]

The Yukon Environment Act of 1991 is no exception. It lists four values in the first sentence: economic, cultural, aesthetic, and spiritual.[20] To be sure, the Yukon Act differs from its American counterparts in that economic value is explicitly listed. However, given that the noneconomic values are routinely translated in economic terms in the United States, the inclusion of economic value probably does not in practice make the law weaker, and in theory could make it stronger, since opponents of excessive economism could argue that the inclusion of economic value precludes the possibility of the other three values (the noneconomic values) being converted into economic terms on the grounds that such conversions lead to a situation in which one value, economic, is promoted exclusively by excluding the other three.[21]

The conspicuous presence of environmental values in the purpose statements of environmental laws in the United States and Canada provides an ideal basis for environmental education. First, the values, if and when they taught, are nonarbitrary. No one can complain about these particular values being taught, for they are specified explicitly in law. Second, there is an important need to teach these values. Environmental values are routinely translated into weak economic values because environmental professionals and concerned citizens have not been taught what these values mean within their proper historical context. Teaching the true meanings of these values will eliminate the need to convert (and the excuse for converting) these values into an aberrant, ahistorical form and permit these laws finally to be carried out as they were intended by the legislative bodies that enacted them. Third, it bridges the gap between the ethical and the political. It provides instruction useful not only at the policy level but also at the level of the individual moral agent. Fourth, it provides primary and secondary teachers with a way to approach environmental ethics without having to rely on the (still confusing) theoretical literature.

Because I consider these values to be evolving social ideals that vary from society to society, as an American I am not in a very good position to provide explicit guidance with regard to the proper interpretation of the values listed in the Yukon Environment Act. However, I can provide some suggestions which may be useful to those interested in preparing curricula materials that will help the children in the Yukon grow up with a correct understanding of the values that they are expected to promote as environmental professionals or concerned citizens.

Obviously, the values to be taught, as far as the Yukon Environment Act is concerned, are economic, cultural, aesthetic, and spiritual. It might be objected that economic value does not need to be taught because students will develop an understanding of economic value by other means, through other subjects, as they do now, or that economic value should not be taught because economic values frequently encourage poor environmental practice. I would respond to these objections by arguing that failing to teach economic value may make it more difficult for students to come to view economic value in the context of the other three. If economic value is to be deemphasized, so that it becomes one of four possible values to be promoted, it needs to be taught along with the other three, not as a super value that provides the other three meaning through a conversion process. To accomplish this task, educators need to teach the historical origins of the contemporary conception of environmental value (as a blend of utilitarianism, pragmatism, and logical positivism). A stress on historical origins is needed to overcome the false view that the economic perspective is the factual, correct way to value the world rather than merely one alternative among many.

The manner in which the other three values should be handled is much more difficult to determine, especially since these values have to reflect not only Euro-Canadian but also First Nations perspectives. Some personal experiences in the Yukon in 1993, however, have suggested a possible approach. During my first conference on environmental ethics in the Yukon, "The Forum on Northern Protected Areas and Wilderness," I noted with interest that Ed Shultz in his opening remarks invoked cultural, spiritual, and traditional values, without making reference to aesthetic value at all.[22] During the break between sessions, moreover, Shultz confirmed that the omission had been intentional, noting that the Yukon was simply "home." Later, during one of the workshops I moderated, on "Ethics and Judgement," I asked the First Nations people attending the session if they considered nature beautiful. After a long silence, a Euro-Canadian commented that one of my speakers, Lu Johns Penikett, had previously remarked, in criticism of aesthetic value, that "nature was boringly beautiful." When she confirmed that that was her view, the room exploded with additional comments about the boring nature of natural beauty and, mirroring my conversation with Shultz, affirmations that nature was just home, a place where First Nations people lived. On the basis of these experiences along with a few later discussions, I have concluded, tentatively at least, that cultural and spiritual values were included in the purpose statement of the Yukon Environment Act as First Nations values and aesthetic value as a Euro-Canadian value. If this surmise is correct, then it would be most appropriate, in order to align environmental ethics education with environmental law in the Yukon, to organize instruction about the Euro-Canadian environmental value perspective under the heading of "aesthetic value" and the First Nations perspective under the heading of "cultural and spiritual values."

Because I have absolutely no expertise with regard to the cultural and spiritual values of First Nations people, I leave curricula development in that area to others.[23] In the balance of this paper, I concentrate on the Euro-American/Euro-Canadian

24

tradition that provides the historical context for aesthetic value. This tradition is a product of the modern period and is based primarily on representational thinking. I first discuss the American tradition. Then I discuss the similarities and differences in the Canadian tradition. Finally, I conclude with some observations about the connections between the Canadian and American traditions and the connections of both with the First Nations traditions. Because I also do not feel that I have any extensive insight into Euro-Canadian traditions, what follows is intended simply as a preliminary guide to the Euro-Canadian perspective, with the expectation that Canadians will build on, and perhaps in many respects replace, this reconstruction.

Aesthetic value: The Euro-American/Euro-Canadian perspective

The common European tradition

In the Middle Ages, the people of Europe were ill-prepared to think favorably about nature at all. The basic perspective was Christian and otherworldly. Educated people were taught that love of nature would detract from love of God. The standard way of thinking itself — symbolic thinking — made the aesthetic appreciation of nature virtually impossible. When Europeans of that time looked at an image of a loaf of bread, a fish, or a lamb, they tried to think of an appropriate biblical passage or story that that image best symbolized. When they looked at mountains, they thought of the wrath of God at the time of Noah.

In the early modern period, these attitudes began to change as a result of developments in landscape gardening, landscape painting, prose and poetry, picturesque travel, and natural history science. The first of these involved the establishment of the garden as an aesthetic natural object. The Catholic Church reluctantly came to approve of gardens as a symbol of the Garden of Eden and as a symbol of the afterlife to come.[24] Later the garden became a realm of human domination with the creation of formal gardens in which plants became imperfect materials to be shaped and organized into a more perfect form.[25] Finally, the formal garden and its philosophy of domination was gradually replaced by informal gardens in which the focus was on the individual plant independent of its relationship with other plants in the garden and on its aesthetic properties in a natural, untrimmed condition. The rise of the informal garden was related closely to the importation of foreign plants. Initially, the Catholic Church objected to such importation and relented permitting plants as symbols if they were mentioned in the Bible. As interest in obtaining plants from North and South America and Asia increased, the prohibitions were eventually ignored and dropped. The display of foreign plants in these gardens encouraged an interest in natural environments outside of Europe and a comparative curiosity about local plants. The botanical garden of today reflects both the aesthetic perspective of the informal garden and the scientific perspective that arose out of the biological classification and collection project carried out in the modern period. The scientific and the aesthetic have become so intertwined in these gardens that scientific information provided is part of the aesthetic experience of the visitor.

Landscape painting is perhaps the most important of the developments contributing to our contemporary aesthetic perspective. In the late Middle Ages artists began experimenting with representational perspective. In the beginning, natural scenery was used simply as a background and no effort was made to depict real places. The first major artist to be associated with representational landscapes was Titian. He was followed by two other painters, Claude Lorrain and Salvator Rosa. Each came to represent a specific aesthetic quality of nature. Rosa became famous for depicting the *sublime*, the scary or terrifying elements of nature, which, nevertheless, provided a thrill to the observer. Characteristic of Rosa's paintings and those who copied his style were stormy skies and jagged and irregular rock formations protruding from the earth. Claude specialized in more harmonious and pleasing representations of nature. The human figures were small, giving nature a greater, more equal status, intense light suggested a spiritual element while highlighting the materiality of the world, and a ruin or castle in the background provided an additional humanizing effect, bringing the human and the nonhuman closer together. Because the sublime of Rosa's paintings was considered the opposite of the *beautiful* and the view that humanly generated art, not nature, was beautiful was still the accepted position of most educated people, the landscapes in Claude's paintings were classified as an intermediate point between the sublime and the beautiful: the picturesque. Although such landscapes were not truly beautiful, they approached the beautiful as part of Claude's paintings. Viewed in this way, these works of art inadvertently lead to a direct appreciation of natural landscapes as travelers noticed similarities between Claude's landscapes and landscapes in the real world. To make it easier to appreciate such scenery, travelers viewed natural landscapes through a "Claude glass" (a darkened, lens-shaped mirror framing the landscape in the image of a painting, creating the desired effect), complete with picture frames and golden brown tint on the glass to match the color of the varnish on Claude's paintings.[26] Eventually they learned to appreciate the beauty of nature without this technical aid.

Although the appreciation of picturesque natural landscapes arose out of an appreciation of representational painting, it was actually preceded by the direct aesthetic appreciation of mountains as sublime. European travelers began having sublime experiences in the 1680s.[27] Until that time mountains had been viewed as symbols of the wrath of God. Suddenly, however, travelers began to feel the power of God secularly in the mountains themselves as "a delightful Horrour, a terrible Joy."[28] In the next century, the writings of William Gilpin, who argued that nature was not only sublime but also picturesque, promoted the joys of picturesque travel and provided a model for the early writings of Thoreau.

The literary side of these developments has its origins in the philosophical analysis of the sublime, particularly in reaction to Edmund Burke's *Philosophical Inquiry into the Origin of Our Ideas on the Sublime and the Beautiful*, which was published in 1756, a book that was the chief target of Gilpin's writings. In addition, it can be regarded in light of the writings of a variety of poets, culminating with the Romantic poets, as a first attempt to provide a vocabulary for the aesthetic experience of natural scenery. In the early stages of picturesque travel, authors merely stated at the end of descriptive passages that the landscapes described were beautiful. Eventually, they cited lines from their favorite nature poetry. For example, Meriwether Lewis of the Lewis and Clark Expedition, upon reaching the Great Falls of the Missouri, lamented that he did not have "the pen of [James] Thomson," England's first major nature poet, or "the pencil of Salvator Rosa."[29] Gradually, travelers developed the ability to produce descriptive passages that revealed that the scenes described were beautiful without having explicitly to say so in the closing line. The nature writings of the past two centuries are a direct product of these literary developments. These historical achievements are generally overlooked because our aesthetic appreciation of nature has continued to evolve beyond the original terminology. Most of what was once sublime has come to be described as beautiful as we have become more comfortable with the sublime in nature. For example, mountains that were originally viewed as terrifying are now more frequently seen as harmonious, calm, and stable. The range of scenery that is *sublime* has become so limited that ordinary people no longer use the word and indeed have not even had a word to express for this kind of aesthetic experience since the Hippies in the 1960s altered and humorized the word *awesome*, which until then had been the popular replacement for *sublime*. The main reason that the terminology of nature aesthetics is in such bad shape today is that philosophical study of aesthetics, although having its origins in the aesthetic experience of nature, has been narrowed and refocused as the study of art rather than beauty.

Because science is normally thought of as fact in opposition to value today, the role of natural history in the development of nature aesthetics is almost universally overlooked. It was, however, as important if not more important than representational painting. The idea that science is entirely factual has arisen out of a distinction made by Galileo and popularized by Descartes according to which the properties of the natural world are classified as primary (quantifiable properties such as length, width, and depth) and secondary properties (such as color, taste, smell, sound, and texture). Although physics and chemistry came to be associated exclusively with primary properties, natural history science through its biological and geological classification activities remained focused on secondary properties, providing a natural link with and a great deal of interaction between natural history science and the humanities. From the beginning nature poets relied on firsthand observation "in the field" and were careful to make sure that their writings scientifically accurate.[30] The relationship between landscape painting and natural history science was even closer and more interactive. In order to illustrate their studies, scientists took art lessons, providing them with the aesthetic perspective of the artist. Artists, in turn, began to represent nature so carefully that scientists frequently thought of them as scientific illustration.[31] The aesthetic dimension of natural history or environmental science is demonstrated endlessly today in natural areas throughout North America each time an interpreter provides park and nature center visitors with scientific information that enhances their aesthetic experiences.

The Euro-American tradition

When I present this aesthetic tradition in public lectures,[32] I illustrate my discussion with landscape paintings from the symbolism of the late Middle Ages to the scientific realism of the late nineteenth century, passing over the literary quickly since it does not lend itself to the pictorial, but pausing for a detailed discussion of the differences between the formal and informal garden. An important element of such a presentation is the fact that American painters were forced into painting natural landscapes, as an alternative to portrait painting, because they lacked the patron system that freed them from the need to paint for money. As I illustrate through a close examination of the life of Thomas Cole, founder of the Hudson River School, the focus on landscape painting was reluctant on the part of the artists but amazingly popular among the American people.

Because he was a poor portrait painter, Cole was forced to turn to landscape painting in order to support himself while engaging in more artistic, but less popular painting. Cole himself was disgusted by the popularity of his landscape paintings, feeling that the poor taste of the American people prevented him from becoming a better painter.[33] Although Cole wanted to paint ideal or composed paintings, he was forced, against his wishes, to paint real landscapes because of the American obsession with representations of real places. Because he felt that such paintings lacked creativity, he complained that the American people wanted "things not thoughts."[34] In contrast, Asher Durand, who became the leader of Hudson River School after Cole's death, took the opposite view writing that "the subject of the picture, the material object or objects from which it is constructed, are the essential parts of it. If you have no love for them, you can have no genuine feeling for the picture which represents them . . . . We love Nature and Beauty — we admire the artist who renders them in his works . . . ."[35] In addition, as Novak writes, this love of the real was intertwined with national pride: "In America, if anything, the taste for the real was stimulated by a national predilection for the specific and the recognitory and, above all, by the scenery that augmented the national pride — which was, of course, America's own."[36]

National pride played a role from the beginning, early in the nineteenth century, as artists began bringing back views of the American West. This started in the 1830s with George Catlin, who painted landscape between portraits of Native Americans, and was followed quickly by Karl Bodmer, who accompanied Prince Maximilian of Neuwied, and by Alfred Jacob Miller, who accompanied William Drummond Stewart of the British Army on his several journeys into the Rocky Mountains. It continued as Frederick Church excited comparative interest in the West with his paintings of South America, and as Albert Bierstadt, Worthington Whittredge, and others from the Hudson River School traveled west. Also, California landscape photographers, such as C. E. Watkins and E. J. Muybridge called the attention of Europe to the beauty and sublimity of Yosemite, and a variety of artists, including Thomas Moran and William H. Holmes, and landscape photographers, especially William H. Jackson, accompanied the major geological surveys in the 1860s and 1870s. It culminated with the publication of *Picturesque America*, edited by the poet William Cullen Bryant, which documented the beauty of the United States across the continent. The impact of these paintings and photographs was so great that virtually every place depicted by a major artist is today a national park or a national monument.

The Euro-Canadian tradition

The Canadian tradition has been generally overlooked and underrated in part because much of the exploration of Canada took place before Canada became a country. Although this exploration was documented in much the same way by artists in Canada as it was in the United States, and obviously had the same impact on Canadian aesthetic perceptions toward nature, it is not as closely associated with a sense of national pride. There are even overt and problematic suggestions that the resulting aesthetic vision is not adequately Canadian because it was produced by artists looking at Canada through foreign (European or American) eyes. Obviously these issues need some resolution before a successful environmental value curriculum can be designed.

I was not able to find a single book that covered the whole period, and the each of the two books that I found to be most useful, for the most part, ignored the material covered by the other.[37] Rees' *Land of Earth and Sky: Landscape Painting of Western Canada* presents a dismal picture Canadian painting by concentrating on prairie, "a vast, dry, nearly featureless plain," without mention of the mountains of the west coast.[38] Reid's *Our Own Country Canada*, on the other hand, makes no mention of the first half of the nineteenth century, perhaps because Canada was not yet a country, and focuses on developments after 1860 in what is now Quebec and Ontario and, eventually, on the painting of the mountains of the west by those eastern artists, sweeping past the prairie with little comment. Neither book is very inspiring in tone. Reid distractingly concentrates on the personal animosity between Canada's two most important landscape painters of the time, Lucius O'Brien and John A. Frasier. Even worse, Rees treats all of the late nineteenth century artists he discusses with mild contempt not only because they see Canada with European or American eyes, but also because they were paid to produce "the propaganda of the CPR."[39] Rees' requirements for a truly Canadian aesthetic vision are so stringent that only the Group of Seven of the early twentieth century fully qualify, and this group of artists comes far too late to be the basis for an environmentally useful Canadian conception of aesthetic value. [40] Reid also suggests that "national" landscape painting did not arrive in Canada "until the *début* of the Group of Seven."[41]

In my view, it is not necessary for the purposes of environmental education to find a purely Canadian aesthetic perspective. While it is true that the Canadian perspective as it developed during the nineteenth century is a perspective seen through European eyes, the same is true of the American perspective. For example, two of the three earliest western artists that I mentioned above, Alfred Jacob Miller and Karl Bodmer, were Europeans, British and German, respectively. In addition, virtually all of the American artists spent a period of time in Europe studying before returning to make their names as landscape painters in the United States. There were, nevertheless, differences between the visions of these painters and their European counterparts — specifically, the subject matter shaped their visions of nature in different ways. For example, American painters, unable to paint scenes with the castles and ruins required of picturesque painting in Europe, focused instead on wildness as a unique element that was not found in Europe. Close attention to Canadian painting will likely uncover similar differences.

Turning to American influence, it is true that Canadian painters were aware of the Hudson River School and some painters, particularly those in Quebec, sometimes painted in Vermont and New Hampshire, overlapping with the territory of the Hudson River School. They did not, however, travel to the United States to learn from their American counterparts. According to Reid, Canadian art began with the "Great Exhibition" in Montreal in 1860, which led immediately to the founding of the Art Association of Montreal by vote of the Canadian Legislature in Quebec City.[42] The Society of Canadian Artists was established in Montreal in 1867,[43] the Ontario Society of Artists in Toronto in 1872,[44] the Royal Canadian Academy of Arts in 1879.[45] By 1882 the National Gallery of Canada had opened in Ottawa.[46] The artists involved were primarily landscape painters, a mix of French, British, Germans, and Scots. Although they initially painted landscapes in Eastern Canada, they moved toward the mountains of the west with the building of the Canadian Pacific Railway.[47]

I have encountered only two explicit mentions of American influence on the Canadian tradition. Paul Kane saw George Catlin's paintings in London in 1843 and resolved to follow Catlin's lead by documenting the lives, customs, and lands of the First Nations peoples on the plains and the Pacific coast.[48] In addition, Albert Bierstadt, a German-born American painter of great note, displayed a painting at an exhibit in Montreal in 1865, donated a painting to the Art Association of Montreal in 1878, and painted occasionally in eastern Canada in the 1880s.[49] As Reid points out, Bierstadt did have an influence over one important Canadian painter, Lucius O'Brien.[50] These two influences, Catlin on Kane and Bierstadt on O'Brien, however, are hardly adequate to discredit the authenticity of Canadian landscape painting, which, at a minimum, is a parallel and complementary development, and, together with American painting, documents the aesthetic reaction of Europeans to the beauty of North America as a whole.

The biggest problem is that the Canadian Pacific Railway played an inordinately important role in the promotion of Canadian luminist painting[51] as part of its promotion of Western Canada and continued to do so long after the painting had ceased to be popular. For example, Reid writes: "In the nineties and the first decades of this century, they must have seemed to most of the informed art audience to have been almost comically bombastic. Had they not been commissioned by the CPR, they would not have been painted at all."[52] In response, it is important to note that railroads and even one California steamboat company engaged in similar promotion, but not to the degree that the CPR did. The main reason for the difference seems to be that western expansion took place on a different time schedule in the United States, making aesthetic promotion by business interests largely unnecessary since it occurred naturally with settlement and exploration throughout the first three-quarters of the century. Because Americans began to have continental aspirations with the acquisition of the Louisiana Purchase in 1804, Americans were interested in and ready for the topographical painting that began in the 1830s and they associated it with a sense of national pride. Although comparable painting was produced in what was to become Western Canada during the same time period,[53] a similar sense of national pride was not generated in large part because Canada was not yet a nation. In addition, because Western Canada was run by a fur trade monopoly that was opposed to settlement,[54] there was much less interest in the area until Canada became a country and the decision was made to accelerate development. CPR-subsidized painting is actually comparable to, and contemporary with, government-subsidized painting and photography on the major geological surveys in the United States, for example, to Yellowstone, the Grand Tetons, and the Grand Canyon. To date, the fact that Thomas Moran was employed by the government of the United States while painting in Yellowstone or the Grand Tetons has never been used as an aesthetic criterion for evaluating his paintings. Viewed in this broader context, the systematic devaluation of the work of Canadian artists who were paid by the CPR, which was also a heavily subsidized project of the government of Canada, is excessive and extreme.

To teach Canadian environmental aesthetics properly, the exploration and scientific study of of Western Canada in the early nineteenth century has to be taken into account. At first glance, one might be inclined to say that nothing happened except for extensive fur trapping and occasional visits by naturalists and artists. Although in official history the east and west coasts of Canada were not connected until the last spike was driven into the CPR line in 1885, the connection was really made sometime in 1810 with the discovery of a freight canoe route across the prairie and through the western mountains to the Pacific. As Cashman notes: "The traders of Montreal and their western agents had leaped the barriers of the Canadian Shield and the Rocky Mountains and had strung lines of power and influence from sea to sea. . . . To the south there was no such route across the American half of the continent. Canada had a jump of a full quarter-century on the United States."[55] To be sure, this early exploration, which is contemporary with the Lewis and Clark expedition in the United States, cannot be documented by paintings any more than the Lewis and Clark expedition can. Nevertheless, it can be illustrated, if necessary, by contemporary photographs and video. With regard to the subsequent exploration in the first half of the century, aesthetic documentation is available through the paintings, drawings, and watercolors of Henry James Warre, George E. Finlay, George Seton, R. B. Nevitt, William Armstrong, Peter Rindisbacher, and Henry Youle Hind.[56] Major early Canadian artists include Paul Kane and Frederick Arthur Verner.[57] They in turn were followed by a variety of of illustrators as well as most of the major artists of the east with the coming of the railway.[58] Especially important in this aesthetic documentation is the landscape photography of William Notman and those who worked for him, who took advantage of the new photographic technology more fully and systematically than their American counterparts, influencing Canadian painting very significantly.[59]

Reid highlights still another problem when he refers to the painting of Bierstadt and Frederick Church as "Art for Imperialists."[60] Anyone who holds this attitude will be unlikely to be interested in using luminist painting of the nineteenth century as part of an environmental aesthetics education program. As Reid himself notes, however, ". . . nonetheless so it appealed to a broad public in the United States, in Europe and Canada."[61] To be frank, this problem is not just a problem of the art but also of environmentalism itself, which, to the dismay of many contemporary environmentalists, was started in the nineteenth century by the rich, powerful, and well-educated. Environmentalism as a movement did not have to go through years of ridicule before it came to be accepted. Rather, as nature preservation, it almost spontaneously popped into the heads of people in the position to turn Yosemite, Yellowstone, and many other parts of the United States into protected areas. Granted, both environmentalism and landscape painting appealed to the people that Reid calls imperialists. Nevertheless, the influence of this environmentalism and painting was something distinct from that imperialism. It has produced a way of thinking, distinct from consumerism, that causes citizens today of the United States and Canada to take photographs of natural objects, animals, and plants in protected areas, not to exploit and destroy them, and to care about places that they have not and may never visit. To fail to recognize that the aesthetics of these paintings is part of a major and environmentally beneficial tradition, which so-called imperialists of the nineteenth century happened quite contingently to admire along with many other people, simply leads to lost opportunities in teaching environmental values.

Exposure to this kind of painting and photography, together with bits of history and material from such related fields as literature, natural history science, and landscape gardening, can provide students with a clear picture of the historical background upon which their environmental values and intuitions are actually based, and making that background explicit, can provide them as citizens of Canada and the Yukon with the ability to articulate and critically evaluate those values and intuitions.

Putting it all together

The status of visual images

Although I have focused on painting in my discussion of aesthetic value, I have done so only because it has played a special role in the development of the aesthetic appreciation of nature, promoting a way of thinking that has been especially useful in protecting nature. It is this type of thinking, representational thinking, in contrast to the symbolic thinking of the Middle Ages,[62] that makes political action about places people have not visited possible. Symbolic thinking, to be sure, has done some good. For example, in the United States the bald eagle exists today only because it is the symbol of the country.[63] Representational images, however, have had a much broader impact. Paintings and photographs of Yosemite and Yellowstone were essential to the establishment of those places as protected areas. Visual materials today continue to provide essential information about and large-scale preservationist support for places that people may never visit personally. In all likelihood, this type of thinking is the basis for much of what is called "sense of place." It is because we continue to think representationally that huge number of nature calendars, magazines, and coffee table book are sold annually by environmental organizations. If representational thinking was ever abandoned by ordinary people, for example, as a result of ordinary people finally embracing the abstract expressionist view of aesthetics that has dominated professional art since the 1890s, it could become very difficult to muster significant political support for the protection of particular places.

Landscape painting and photography, nevertheless, are only one element in a mix of material. They cannot, and should not, for example, be considered a replacement for direct experience of nature, which encompasses many elements that cannot be captured visually. The aesthetic appreciation of a visual image requires some experience with real landscapes in order for the observer to be able to construct a relationship through imagination with depicted landscape. Written and oral descriptions are also important, but work better as a complement to visual images rather than as an alternative. Visual images are, likewise, very useful in presenting natural history or environmental science, but once again are not a substitute for direct experience of plants, animals, and natural areas.

The relationship of the aesthetic with the cultural and spiritual

At the beginning of this paper, I presented anecdotal evidence for believing that the aesthetic value listed in the Yukon Environment Act is a Euro-Canadian environmental value that is not shared by the First Nations people, who largely consider nature to be "boringly beautiful." Although this reaction to aesthetic value clearly provides a basis for distinguishing Euro-Canadian and First Nations perspectives, it is important not to make too much of it, for it is quite obvious that First Nations people also have a rich aesthetic sense. The difference is more political than aesthetic. At an environmental hearing, Euro-Canadians are much more likely to make remarks in terms of aesthetic value and less likely to invoke cultural and spiritual values. The First Nations people, in turn, will most likely speak in terms of cultural and spiritual or traditional values, omitting reference to aesthetic value as such.

There is, nevertheless, a good deal of overlap between these values. As I have shown in this paper, Euro-American aesthetic value is the product of three to four centuries of changes in cultural perspective. In this sense, aesthetic value is a Western cultural value, and given its centuries-old role, a traditional value as well. In addition, close attention to the historical development of the Western conception of natural beauty reveals that aesthetic value also has its foundations in spiritual value. As Marjorie Hope Nicolson notes, the emergence of the sublime involved a direct transfer of properties of God to the natural landscape: "Awe, compounded of mingled terror and exultation, once reserved for God, passed over in the seventeenth century first to an expanded cosmos, then from the macrocosm to the greatest objects in the geocosm — mountains, ocean, desert."[64] In the modern period, Westerners moved from a conflict between love of God and love of nature to a perspective from which they could love God through nature. Even though this love of nature eventually became thoroughly secularized, it retains strong, but largely unarticulated, and perhaps unarticulatable, spiritual elements that are essential to wilderness and other nature experience.

With regard to the cultural and spiritual values of the First Nations, the situation seems to be reversed. The First Nations peoples quite obviously have strong aesthetic sensibilities that are used extensively in their presentations of cultural and spiritual values. Just as cultural and spiritual values are subsumed within the aesthetic perspective of the Euro-Canadian perspective, aesthetic value seems to be subsumed within the cultural and spiritual perspectives of the First Nations people, where it plays an important though secondary role.

Because I have stressed representational thinking in my discussion of aesthetic value, it might be supposed that the narrative approach of the First Nations people to cultural and spiritual values will require teachers to handle aesthetic value, on the one hand, and cultural and spiritual values, on the other, in radically different ways, making it difficult to relate them to each other in meaningful ways. This problem is largely illusory. Although I stressed representational thinking in my discussion of aesthetic value, I also presented aesthetic value *historically*. Such presentation is itself a story or a narrative, and parts of it, when fleshed out, for example, an account of the explorations of David Thompson or Simon Fraser in the mountains of Western Canada for classroom use, will also be in narrative mode. Such a narrative approach is even compatible with recent environmental ethics theory — for example, Jim Cheney's conception of "bioregional narrative" or Holmes Rolston, III's conception of "storied residence."[65]

Representational painting can probably even be used directly to enhance the presentation of the First Nations perspectives on cultural and spiritual values. Most artists who went west in the United States were extremely interested in and sympathetic to the Native Americans they encountered. Many painted portraits of Native Americans and scenes from their ordinary lives. As George Horse Capture, Curator of the Buffalo Bill Historical Center, has pointed out, Karl Bodmer's paintings and the descriptive accounts of Prince Maximilian from the 1830s have provided a "window to the past" of "all the prairie peoples," permitting Native Americans actually to *see* their own past "face-to-face."[66] Comparable works of art are available in Canada. Especially important in this regard is the work of Paul Kane, who once wrote, "The principle object of my undertaking was to sketch pictures of the principal chiefs, and their original costumes, to illustrate their manners and customs, and to represent the scenery of an almost unknown country."[67] The presentation of such paintings can be multidimensional, intertwining aesthetic, cultural, and spiritual values and illuminating both the Euro-Canadian and First Nations perspectives and traditions.

Putting economic value in perspective

As I noted at the very beginning of this paper, environmental policy and decision making is currently dominated by economic values because the other values have not be taught and have therefore come to be treated as meaningless. Throughout this paper, I have stressed that these values be taught in a historical context. I have done so because these values, and what they mean, can most easily be found and most clearly articulated in the actual history of Canada and its peoples, Euro-Canadian and First Nation. If this history is lost, the values will also be lost.

According to a party slogan in Orwell's *1984*, "Who controls the past controls the future; who controls the present controls the past."[68] The same can be said of Canada. If citizens are permitted (or encouraged) to forget their past, they will forget the values forged in that past. They will forget what they stand for as both individual citizens and as a nation of citizens. Preventing such a disaster is, I have tried to suggest here, a manageable one, well within the means and abilities of primary and secondary teachers. If they are successful, Canada will remain not just a community of consumers, but of citizens as well.

Notes on contributor

Eugene C. Hargrove is the founding editor of the journal *Environmental Ethics* and author of *Foundations of Environmental Ethics* (Prentice-Hall, 1989). He chairs the Department of Philosophy and Religion Studies at the University of North Texas, which has the most comprehensive graduate program in environmental ethics.

Notes and references

[1] Eugene C. Hargrove, "Science, Ethics, and the Care of Ecosystems," in Juri Peepre and Bob Jickling, eds., *Northern Protected Areas and Wilderness* (Whitehorse: Canadian Parks and Wilderness Society and Yukon College, 1994), pp. 44-61.

[2] Ibid., pp. 50-53.

[3] The chief problem is that rights are traditionally considered protections of the interests of individuals and most environmental entities that environmentalists would like to protect (for example, ecosystems and species) are aggregates of individuals and relationships that do not have identifiable interests that can be protected in any straightforward way.

[4] See Eugene C. Hargrove, *Foundations of Environmental Ethics* (Englewood Cliffs: Prentice-Hall, 1989), particularly chaps. 3 & 4.

[5] See Hargrove, "Science, Ethics, and the Care of Ecosystems," pp. 47-50, 56-59.

[6] Aristotle, *Nicomachean Ethics*, bk. 10, chap. 9.

[7] In fact, there is a continuing international effort to get the major religions throughout the world to promote environmental education and sound environmental practice.

[8] Of course, it is also important to avoid the value clarification approach, according to which each person creates his or her values, an approach that promotes a moral relativism that is inconsistent with moral education. It is one thing to tell children that everyone can think whatever they want about the issue, moral relativism, and another to admit that it is a difficult issue about which we have not yet reached adequate agreement within the moral community. In the first case, the child is presented with a view of morality in which a view is okay if someone holds it. In the second case, the child is presented with a social problem which he or she may someday help resolve.

[9] See Aristotle, *Nicomachean Ethics*, bk. 1, chap. 2 and bk. 10, chap. 9.

[10] Aldo Leopold, "The Land Ethic," in *A Sand County Almanac: With Essays on Conservation from Round River* (New York: Ballantine Books, 1966), p. 240.

[11] Mark Sagoff, *The Economy of the Earth: Philosophy, Law, and the Environment* (Cambridge: Cambridge University Press, 1988), pp. 7-8, 92-94.

[12] See, for example, Environment Canada, *A Primer on Environmental Citizenship: The Environmental Citizenship Series* (Ottawa: Minister of Supply and Services Canada, 1993). A version of the book is available on the World Wide Web at http://atlenu.bed.ns.doe.ca/udo/primer1.html.

[13] Ibid., Q1.7.

[14] Ibid., Q1.8.

[15] Ibid., Q1.9.

[16] For example, Mark Sagoff, Holmes Rolston, III, and Bryan G. Norton.

[17] Public Law 88-577, in U.S., *Statutes at Large* 78 (3 September 1964), pp. 890-91.

[18] Public Law 91-190, in U.S., *Statutes at Large* 83 (1 January 1970), p. 852.

[19] Public Law 93-205, in U.S., *Statutes at Large* 87 (28 December 1973), p. 884.

[20] Environment Act, *Statutes of the Yukon* 1991 (29 May 1991), p. 9.

[21] When environmentalists successfully challenged the application of a California timber law on the grounds that economic value was not one of the values promoted by the law, the state legislature added economic value to the law. Environmentalists are now challenging the new practice of promoting economic value and ignoring the other values (personal communication with Sharon Duggan).

[22] Ed Shulz, "Opening Remarks," in Peepre and Jickling, *Northern Protected Areas and Wilderness*, p. 43.

[23] The creation of First Nations curricula materials for primary and secondary schools was discussed in the session on "Environmental Ethics and Education" in "Forum on Northern Protected Areas and Wilderness" in 1993, and in the "Forum Summary" Norma Kassi stated that teachers should "learn the true history of [the Yukon] and begin with the First Nations people and the knowledge they have and implement that knowledge into the education system" and that many First Nations people are willing to participate in introducing their perspective into the education system. Norma Kassi, "Summary Forum," in Peepre and Jickling, *Northern Protected Areas and Wilderness*, pp. 372-73.

[24] See Kenneth Clark, *Landscape into Art* (New York: Harper & Row, 1976), chap. 1 ("The Landscape of Symbols").

[25] See Hargrove, *Foundations of Environmental Ethics*, pp. 81-84, for a fuller discussion of this matter.

[26] Clark, *Landscape into Art*, p. 178.

[27] See Majorie Hope Nicolson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite* (New York: Norton, 1959), especially chap. 7.

[28] Ibid., p. 277.

[29] Reuben Gold Thwaites, ed., *Original Journals of Lewis and Clark Expedition* (New York: Dodd, Mead, 1904), p. 149. The remark was written on 13 June 1805.

[30] See Nicolson, *Mountain Gloom and Mountain Glory*, pp. 20-21, 347-48, and Myra Reynolds, *The Treatment of Nature in English Poetry* (New York: Gordian Press, 1966), pp. 327, 335.

[31] For example, William H. Brewer, a botanist, wrote of a painting by Pratt called "The Garden of Eden" that it was "Very interesting in a botanical sense as well as others." 1848 Diary, p. 15, in Box 8/Folder 208, William H. Brewer Papers, Yale Historical Manuscript Collection, Yale University. Similarly, of Goat Island of Niagara Falls, he wrote that it was "Interesting alike to the painter, poet and man of science. But comment is needless." 1851-1852 Diary, p. 6, in Box 8/Folder 208, Brewer Papers.

[32] For example, "The Role of Socially Evolved Ideals in Environmental Ethics Education: A Historical Approach involving the Sciences and the Humanities," in "Environment, Ethics, and Education," Yukon College, July 14, 1995.

[33] For a longer discussion of Cole, see my discussion in *Foundations of Environmental Ethics*, pp. 97-98, and Barbara Novak, *American Painting in the Nineteenth Century: Realism, Idealism, and the American Experience* (New York: Praeger, 1969), chap. 3.

[34] Novak, *American Painting*, p. 70.

[35] "Common Sense in Art," *The Crayon* 1 (1855): 81. Quoted in Novak, *American Painting*, p. 62.

[36] Ibid., p. 91.

[37] Ronald Rees, *Land of Earth and Sky: Landscape Painting of Western Canada* (Saskatoon: Western Producer Prairie Books, 1984) and Dennis Reid, *Our Own Country Canada: Being an Account of the National Aspirations of the Principal Landscape Artists in Montreal and Toronto, 1860-1890* (Ottawa: National Gallery of Canada, 1979).

[38] Rees, *Land of Earth and Sky*, p. 1.

[39] Ibid., p. 27.

[40] Ibid., pp. 36-41.

[41] Reid, *Our Own Country Canada*, p. 438.

[42] Reid, *Our Own Country Canada*, pp. 14-17.

[43] Ibid., pp. 101-03.

[44] Ibid., pp. 199-202.

[45] Ibid., pp. 281-82.

[46] Ibid., p. 289.

[47] Ibid., chap. 13.

[48] Rees, *Land of Earth and Sky*, p. 12.

[49] Reid, *Our Own Country Canada*, pp. 292-93.

[50] Ibid., pp. 295, 318, 325.

[51] This term was invented by John I. H. Baur, "American Luminism," *Perspectives USA*, no. 9 (Autumn, 1954): 90-98, and was not applied to the artists during their own lifetimes. I see no reason not to use the term for their Canadian counterparts.

[52] Reid, *Our Own Country Canada*, p. 437.

[53] Rees, *Land of Earth and Sky*, pp. 3-15.

[54] Tony Cashman, *An Illustrated History of Western Canada* (Edmonton: M. G. Hurtig, 1971), p. 65.

[55] Ibid., p. 34.

[56] See "Likeness of a New Land: Topographers in the Canadian North West," in Rees, *Land of Earth and Sky*, pp. 3-10.

[57] See "The West as Romantic Wilderness: The Art of Paul Kane and Frederick Verner," ibid., pp. 11-15.

[58] See "The West as a Frontier Settlement: Special Artists from the Illustrated Press," ibid., pp. 16-26. For the activities of artists of comparable stature to those in the Hudson River School, see Reid, *Our Own Country Canada*.

[59] Reid, *Our Own Country Canada*, pp. 28-44.

[60] Ibid., p. 295.

[61] Ibid.

[62] See J. Huizinga, *The Waning of the Middle Ages* (Garden City, N.Y.: Doubleday Anchor Books, 1954), pp. 202-05.

[63] See Sagoff, *Economy of the Earth*, pp. 132-35, for an application of symbolism in environmental ethics theory.

[64] Nicolson, *Mountain Gloom and Mountain Glory*, p. 143.

[65] Jim Cheney, "Postmodern Environmental Ethics: Ethics as Biogregional Narrative," *Environmental Ethics* 11 (1989): 117-34; Holmes Rolston, III, *Environmental Ethics: Duties and Values in the Natural World* (Philadelphia: Temple University Press, 1988), chap. 9 ("Down to Earth: Person in Natural History").

[66] Introduction, Laserdisk, *Views of a Vanishing Frontier*, A Film by Craig B. Fisher and Helen Ashton, Osprey Productions, Metropolitan Museum of Art Home Video Collection (Chicago: HomeVision, 1988), frames 490-4475. According to Dennis Hastings, Omaha Tribe Historian, these paintings have frequently helped his tribe preserve traditions and even reconstruct elements of their traditions that had become lost (frames 32195-33040): "They [also] provide a measurement of how much has been lost from the [Omaha] culture."

[67] Quoted in Rees, *Land of Earth and Sky*, p. 12.

[68] Orwell, *1984*, p. 109.

What is a good way to teach children and young adults to respect the land? A panel discussion

Lucy Wren, Elder, Carcross Tagish First Nation
Marge Jackson, Elder, Champagne and Aishihik First Nations
Harry Morris, Elder, Teslin Tlingit Council
Carol Geddes, Filmmaker of Tlingit and Southern Tutchone ancestry
Daniel Tlen, Yukon Aboriginal Language Services
Norma Kassi, Vuntut Gwitchin First Nation, International Gwich'in Steering Committee

Moderator: *Bob Jickling, Yukon College*

Harry Morris [Tlingit opening prayer]

Bob Jickling I would like to introduce the members of the panel. Daniel Tlen of the Yukon Territorial Government Aboriginal Language Services; Lucy Wren from the Carcross Tagish First Nation; Marge Jackson from the Champagne Aishihik First Nations; Carol Geddes and Harry Morris from the Teslin Tlingit Council; and Norma Kassi from the Vuntut Gwitchin First Nation.

Carol Geddes When I was asked to come and help on this panel, Bob and I talked about the question of "environmental ethics." The more I thought about it, the less clear my thoughts became. I think when we first started to talk I had more of a handle on it, in fact, than I do now. This is good because at least I now am beginning to understand the source of my confusion about the term "environmental ethics."

I would like to tell you a small story about a very great lady in the Yukon. Her name is Mrs. Annie Ned. This illustrates, in a way, what bothers me about thinking about environmental ethics in the way we do today. Mrs. Annie Ned, some years ago, about seven or eight years ago, was taken to a scientific conference in Kluane National Park. She was with Julie Cruikshank, an anthropologist who has done an a lot of work in the Yukon. I am sure that most of you know her name. Well, Mrs. Ned listened to all of the scientists giving their ideas about physical events in the park: what sort of things happened in the park, the geography of the park, and various other subjects. Mrs. Ned just very quietly listened to this all day. Then as they were leaving that evening, as they were walking to the car, Julie said to Mrs. Ned, "How did you like the conference?"

Mrs. Ned said to her, "They tell different stories than we do."

This is very, very important, in fact it is profoundly important that we hear that. That is what they are, different stories, and I think that it is because we are operating with such totally different paradigms that we have so much difficulty talking about these kinds of issues. Right now, one of the things that makes me grow impatient, and sometimes almost despairing, is that people are presuming to understand a First Nations paradigm — a First Nations way at looking at issues like environmental ethics. In fact, we are not really there yet.

I am thinking from the point of view of someone who is of the first generation of aboriginal people who are thinking about this in two ways. I was born in the bush and lived that way during my first years. I was living in a hunting culture in the bush, but I am also of the generation where we had to go to school. We had to stay in school. In many ways I am thinking in both paradigms, and this is also a source of confusion for me: that I would be able to understand environmental ethics within the context of narrative as the way First Nations people were taught about the environment. We would never have a subject called environmental ethics; it is simply part of the story. When you are a child you first hear the animal mother story, about how animal mother gave the animals to the world, and how people have to consider this as a gift from the animal mother; and if we do not take care of the animals, then the animal mother will start to take the animals back. We see that happening now. That is the context with which we understand environmental ethics, within that narrative, within the storytelling.

On the other hand there is all the scientific knowledge that we also learned in school, the different stories as Mrs. Ned said, the new paradigm. Too many people say, well let's take lessons from First Nations people, let us find out some of their rules, and let us try and adopt some of those rules. Let us try to look at it the same way that First Nations people do. But it is not something that you can understand through rules. It has got to be through the kind of consciousness that growing up, understanding the narratives can bring to you. That is where it is very, very difficult, because people have become so far removed from understanding these kinds of things in a narrative kind of way. The paradigm that is used now really has nothing to do with narrative, because narrative is considered too soft, or just not scientific. I think that the way First Nations people understand this is really the way everybody needs to go. I think that the situation is getting desperate. I think that we need to do the hard work and it is very hard work. When we listen to First Nations people, for me, I have lived in both cultures all of my life, and I have gone to the Elders, but I have a lot of difficulty because of all the years that I went to white schools. There is a lot that I do not understand about what the Elders are saying. I have to be very, very careful about the way I try to understand. I know if it is that difficult for me, growing up in two cultures, then it must be very difficult for other people. I would just caution you that it is not easy —it is incredibly important, but it is not easy.

One of the biggest issues is learning how to understand in a different kind of way. Where the things that the Elders say are made equal and, this is really very hard. Sometimes an Elder says one thing and you go away and think about it for a long, long time. Finally, finally it starts to become clear to you and at that point you go back to the Elder and say, "What did that mean when you said this?" If you are really interested they are willing to help you. Many people, when they are talking to the Elders, want to hear things in a certain kind of way. They want it packaged up, they want it to be like in a text book or something — o.k. here it is, here is the knowledge. It is not like that and that is why it is such a serious undertaking to begin to understand what First Nations people are really saying.

What has been happening recently is like in the film *Lion King* where Simba says, "Father, why do we kill the antelope?" and the father says, "Son, we are all part of the great circle of life." But at the same time that he is saying that, the other values in the film are things like patriarchy, hierarchy of animals and some other really negative kinds of issues that come up there. Too often we are looking at that. We are just saying things without really understanding what we are saying about the great circle of life. We are not doing the kind of serious work that we need to do.

Harry Morris First of all I would like to introduce myself to everyone of you here. My name is Harry Morris, I am from the Teslin Tlingit clan. It is a big honour for me to be here and to share what I have to speak of.

On the first panel here it says what is a good way to teach children and the young Elders to respect the land. To respect the land, first of all I will speak of it concerning me: to respect the land you have to respect yourself first and show respect to the land. The Creator has taught us to respect our land. That is the Mother land. We have to teach our young generations to respect the land, to respect themselves, to respect the land and whatever is on the land — animals. When we are raising them up is the time to start teaching your children how to respect the land. As I was growing up I was taught not to abuse the timber. Not to abuse it is to respect it. I was taught not to shoot at animals. Respect it and only take it as you need it. The same goes for the timber, trees, everything.

When I was growing up my Elders were my teachers, they were the ones that taught me things. When I was growing up, say eight or nine years old, they told me you have to learn both ways. You have to learn how to read and write. This way you will never be stuck, and you have to learn your Indian way. You have to know your history, you have to know your background, you have to know where you came from. If you know this, you will respect what is around you, your environment.

When I was about ten or fifteen I often told my Elders, my uncle, I grew up mostly with my uncle, he told me you have to know your history, your Indian ways, this way you will never be stuck. My grandfather told me the same thing. You have to know how to read and write. The most important part is to know how to read and write. Do not let none of them go. Hold your Indian way with your right hand and hold [white man's] way with your left hand. You will be travelling around this country, you will know your both and you will never be stuck.

In those days it was new to me. I often think that the white man way is the most important part. You have to give up your Indian way and learn the white man way, it is a lot better. I was thinking like this at about eight years old. I was grumbling back at my uncle that he was teaching me how to run my life. My grandfather heard me grumbling back and he says, "I am going to put you in jail. This way you are going to learn. I am going to punish you." He put me up in the attic. He put me up in the attic without a drink of water, without food, for the whole day. It was in the month of July and they were long days. That is how he punished me. He said you are going to learn not to talk back to your Elders. You are going to learn to respect your Elders. So I guess the most important part is to respect your Elders, to respect the land and to respect yourself and everything that is around you. Thank you.

Question Could you comment on how you feel about white men and women asking First Nations people for knowledge?

Norma Kassi He asked you if you think it is strange that white people are coming to us for knowledge to understand First Nations people and what we know about the land and the environment. Do you think it is strange?

Harry Morris No, it is not that strange, it is not strange. We appreciate very much the chance to pass on the knowledge. We appreciate the chance to share what we know.

Carol Geddes I think that it is a natural evolution that people are looking to indigenous people across the world to help find some answers. Again, I reiterate what I said before, that people have to be extremely careful about looking at in a shallow kind of way. It is not as though we can bundle the knowledge and say, "Here it is." It is going to take a lot of work and a lot of different kind of commitment. Everything has to change. People can not keep working the way they do. They can not keep consuming the way they do. It is not something that you just say there is a big circle of life, because it is all so meaningless. I think it is more dangerous than when we were not listened to, personally.

Question How can we, non-native people, be a part of First Nations knowledge?

Carol Geddes I have been going through that for a very long time, trying to understand and going through my own struggles about that. That is why it is very good for me to be a part of this forum, because it really made me think a lot harder. And as I said, my confusion increased. I can not put anybody on a particular kind of road; all I can do is caution that it is very difficult and very complicated. It will take a lot of study, and that is by interacting more with traditional First Nations people. God only knows that we have an enormous number of First Nations people who do not know about this issue and who do not practice environmental ethics in a lot of ways. It is knowing where to go for the real sources and listening hard and watching hard and trying to do the work. There are even books. It is hard for me to answer that because I do not know precisely, all I know is that it is very worthwhile to try and do the work.

Question Do you consider Elders to be sources of knowledge?

Carol Geddes Yes, most of them are. Most people of Harry's generation, and the other two Elders here, are absolute encyclopedias of knowledge about these kinds of issues. I know what you are saying just as resource people, but it takes a whole shifting of the paradigm. You have to start turning things in your own mind, listening in a different kind of way, experiencing it in a different kind of way. It is so different from going to a classroom and hearing somebody repeat a lot of facts. This is a different story and we have to listen to that story in a totally different kind of way. I do not know where to tell people to begin on that — but do begin.

Norma Kassi Before we go on I have to ask Harry some of those questions too so that he could answer them. There were lots of questions but most important was, how can white people learn from us? How can they learn from us about all the things we know about our land and environment, how can they learn?

Harry Morris I was thinking that I will explain the Elders and I called it in my own way, a lack of communication. Most of the Elders know the way, but they never speak about it. They never tried to teach the younger generation. My biggest concern now is to put things on a tape recorder. In our traditional way of life, we would never have a document, we never wrote the history of things down. Therefore I call it a lack of communication, it mostly comes from being handed down from generations. Those that wanted to learn are the ones that have it in their heads, what they were taught and a lot of it they never passed it on. Before anymore of our Elders leave us, I would like to see it start with the young. I call her [Norma] a "paper word," a "modern Indian." Everything we are putting down, she puts it on paper. It would be nice if now we started to put our traditional ways on paper. In this way, if you want to look up the Indian way, you will just look it up on the paper. If you want to hear it on a tape, you just buy yourself a tape and put it on.

Question Should Elders go into the schools to share our history with the students?

Carol Geddes One of the problems that has been is that it has always been on the terms of the school. An Elder will sometimes come into a school and it will be all set up for the advantage of the school. An Elder is sitting there and they think of things in a different way. Somebody might ask too many questions all at once and that is not the way a lot of the Elders are comfortable. They would rather be involved in something they are doing on the land or in their own homes. If we think about different ways to engage the Elders, different ways to get that knowledge, that is more fruitful. It takes patience and takes a lot of commitment to learning in that way. Just inviting someone to a school gives you all the advantages. The Elders are not used to teaching that way, so how do we think about different ways of doing that — this is a very important question.

Question Would you consider having Elders in the classroom a type of cultural learning exchange?

Daniel Tlen I would like to make the point that it is said when a student is ready, a teacher will arrive. The converse is also true, when the teacher is ready the student will arrive.

Another point that I want to make, as Carol just said, is that you have to be committed to learning. Again to reinforce what Carol said, you need to be really serious about seeking knowledge from Elders. Elders are more than happy to share their knowledge. I think it is cultural because not everybody likes to do that, not everybody in the world.

In the Yukon, native Elders have been trained since childhood to tell their stories. They are not afraid to tell you about themselves or what their life was like thirty or forty years ago. They like doing that, that is the way they were trained, that is the way they were brought up. However, when you seek knowledge, it does not fall into your lap. In other words it is not easy, you have to be committed to new ideas and committed to the idea of learning something. You have to be aware that you need to be patient. Sometimes, because of the way you ask your question, the answer you get may not be what you want to hear, or what you think you want to hear, but the answer is in there somewhere. The nugget you are looking for is in there somewhere. A lot of the time it depends on whether you asked the question correctly, whether what you want to know is the right thing to be asking. It is also important to remember that it is fine to have the Elders there — to be taught, to learn, but it is not free. The Elder is like a trained professional of this society.

From my own experience as a kid in Burwash when ever I wanted to hear stories, when I wanted to learn something, I had to go and work in the bush for it. In other words I had to pack water for the Elder, chop wood and then wait until they were ready. Then they will tell you. The point is that this knowledge is not free. The knowledge is there, Elders are prepared to share it, but you need commitment. The other point is that not everyone is a seeker of knowledge and not everyone is a teacher of knowledge. I think those are very special focuses. If you really want to learn, I suggest that you try to know what it is that you want to learn, and at the same time you treat an Elder with humility. If you put yourself in front of an Elder to have them teach you, they are in a very vulnerable position. You need to have that humility as well.

Lucy Wren We used to listen to what our Elders told us to do all of the time. We got to have respect for people, we have to have respect for the Elders. No matter which of the Elders need water, wood, things or food, all we want to know is stories and they like that. We always finished everything and in evening time they told us stories. How to live, not like now-a-days. The trouble is now, I teach (language) in school for many years and I know just the way kids are growing up in the school, their parents at home should teach the kids. That is the way they taught us since we were little. We knew to listen to our Elders, to our parents, but now-a-days, the young people do not try to teach the little ones. That is why they do not listen to you now.

I tell them stories and I talk to them at school, but they do not realize that they should listen to what Elders tell them. If I talk to their parents and tell them to teach like this, they say they do not want to lick them, they do not want to be mean to their kids. I say I love my kids, but I scared them to get them to listen to me. Now they are all grown up and I have no trouble with them. I raised them since they were small and now today, they all listen to me.

I try to tell this to young parents, but they do not listen. That is all I got to say.

Question What of the loss of your language and children not understanding? Where should language be taught? In the school?

Lucy Wren The students in school understand lots, they are doing good, but as soon as they go home the parents do not understand the language. It has got to start at home, it is the only way that the language is going to come back.

Question How do you feel about teaching classes in your language?

Lucy Wren Yes, they tried to teach through night school for the parents in Carcross. The first time lots of people came, but pretty soon only two or three came and usually only one came. You cannot do anything no matter what you do.

Question In your lifetime you had to work hard, do you thing it is easier for children now?

Lucy Wren Now that the kids are grown up now-a-days they are not worried about packing wood, or water and things because the wood is ready, everything is ready. They do not have to pack anything. All they want to learn is to walk around town and sit around and watch TV, that is all. A long time ago we were very ready to help old people. We had to get our own wood, our own water, help them go trapping, set fish nets under the ice. A long time ago we had to help do everything. That is how we were raised.

Question The respect for animals expressed in Native culture is wonderful. Nothing of the animal is wasted. Can you comment on this?

Lucy Wren Yes, they used to tell us that, like moose and all of the animals killed, they did not throw the bones away, they put them away and then used them for something. They used to tell us not to cut little trees down, you were not supposed to. Those trees have got to grow, then you have wood for a fire to live, to keep warm. If you bugger-up those trees, you have nothing, they used to tell us when we were kids.

Daniel Tlen Just to add a little bit to what you said, the traditional way in the Yukon for teaching children is this: The aunts and uncles on your mother's side are the teachers for your children. That is the general way in which teaching and learning was assigned. The reason for that is because most all Yukon natives have a matrilineal structure to their society. In other words, it is the woman and her children that are important. The mother gives her clan designation to her children. It is very important that the mother teach the children, but she does not have all of the resources for teaching the children. She can teach them what she can in the home, that is normal, all mothers do that, but when it comes time for the young person to start to learn different things in their society, then the mother will place the children in the hands of her brothers and sisters. That is the child's aunts and uncles on the mother's side. The aunt and uncle then assume the teacher role for that child. They teach the child what they need to know. In the old days, if you were a man then you had to know how to hunt.

When I was seven years old, the Russians blasted a satellite into space and it was a big thing. When the Americans walked on the moon that was pretty amazing, and now space shuttles are a way of life. When our kids grow up they will have a completely different set of expectations. Space travel is something that they live with, something that they take for granted, while issues of the environment, being closely connected to the land, is not something that is of big concern to kids. What is of concern to them is the whole issue of global environment, that is a big issue for kids. How do we teach them that now? We can only do a certain amount within the school system. The school systems are not working that well. I think that Western society will be going through an educational revolution here soon if not already. I think we are going through the initial stages of it. I think we are going to have to rethink our whole way of educating kids and try to impart some of the things that are important to us, issues of respect for self and issues of the environment.

Marge Jackson What Lucy said, we do the same thing. We say uncle and auntie and girls look after their niece, and the men look after their nephew. If he does not listen to his mom, he is given to his uncle. At this time [today] you cannot spank any kids. If you spank them, it is to learn. My kids listen to me because I spank them.

Sometimes I go up to the village here and little kids fight. They did not do that a long time ago. The way you watch that: our mother got to pay for it. I just want you to know how we used to do it before. We have got to pay.

We have different clans, the Crow Clan and the Wolf Clan. We have to talk to kids and spank kids, if they do not listen to you then give them to your sister to teach them. That is the way it was a long time ago with kids.

I was raised by my grandmother until she died. She taught me lots. When you travel you have to watch for everything. Now when people walk they do not watch, they just walk until they step on bears. You have to watch for everything even a little movement in the bush, but now it looks just like a road. You have to watch where you are going, when to expect something, that is the way my grandmother taught me.

When we travel we did not stay in one place, we have to go over several mountains. We put food in caches and in the wintertime we used dog teams. We just lived off the land. When you stopped some place for a short while, you put in a fish net. Now-a-days if you are hungry for fish you have to go to the store and buy it and it costs you lots of money. The old way did not cost you money, you just made a net and put it in. You dry it and go out again to get enough for dog food.

In the old days people used to travel everywhere by walking. After we used to come back in the fall time and fish some more. I lived at Otter Lake until I was ten years old, then I went and stayed in Klukshu.

At this time we cannot take anything from the land, we are scared that it is polluted. Up the Haines Road we cannot pick any berries now. We cannot eat anything from up that way because of the spraying on top of the traplines. We checked them about two years ago and they are poisoned because of spraying. It lands somewhere. Then after it dries, it goes up in the air again and lands some other place, that is why we have to be careful what we eat. We cannot pick any berries up that way. We have to go somewhere up the Aishihik Road, especially up the summit. We used to get all kinds of berries, but now everything is polluted.

Right here too at Laberge we cannot eat any fish because everything is polluted. Before the highway we could eat fish anywhere, we could set up our tents anywhere, we were not scared at all. We could pick berries anywhere, but not now. We have to go a long ways off of the road before we pick berries. Even the wood we cannot use close to the pipeline.

Talk about kids in the school. They go home and talk Indian to the parents, but they cannot answer them. Maybe they say it wrong, they do not know the difference. The language has to be written down the same as the English language but it will still be said wrong. The only way to learn is to put it on TV and tape recorders. They have to be there when they teach it. When I talk I am there and walking with them, I go with them. When you go to people you ask what they are doing.

My step dad taught us lots about how to hunt moose. This time kids do not know what to say, when to say, and where there is no wind. It was pretty hard the way we were taught. We did not shoot moose out of a car or anything, we had to go walk in the bush and walk a long ways up the mountains, anywhere.

Now it is too far for me to go to Porter Creek. It used to be a long ways to get a moose and we would camp out. A lot of times when I was hunting or trapping and the snow was deep I could not get back until daylight. I would set up a little bush camp and stay there all night and come back in the morning. Wet snow is hard to walk in.

There is a lot of things to learn. Just a corner that is all we try to teach the kids. The whole thing or nothing, but we have to try right, and do it now. The old people are going. After the old people go, who are those kids going to learn from? They are just going to learn from books. You have to teach kids properly in a camp. Last summer we went out there, my niece handled it. She took them to the lake and spent the whole day swimming. They did not learn anything. We stayed right there, Mary, me, my son and Annie his wife, and we did not see any kids all day. If they kill a moose, they have to cut it up while the kids are down at the lake. Who are we going to teach? We have nobody to teach. That is why old people have to teach kids, lots of kids too, but if they keep them away from us we cannot do anything. You have to give the kids to the old people to look after and to talk to the kids. It is the only way they are going to learn.

I used to teach in the school too. Lots of my students talk Indian to me, even white kids talk to me in the store. Mary Jane Jim she was along side of me and said "That white kid he spoke to me, but I do not understand what he is talking about." The kids that want to learn, will learn, but those that do not care for it will not learn. Before the kids used to listen to the Elders, but now it is like they just do not care.

I thought I would teach them how to set a trap. Not one of those kids would dig the hole for me, I did it myself. I tried asking those kids, but they did not want to do it. I said to my niece not to bother helping us if they did not want to.

Even medicine, we know a lot of medicine for everything, which we can teach the kids. If I told you to start right now, that kind of medicine is good, that kind of medicine is good, but you are not going to know for what kind of medicine. The only way is to put it on the TV, where to dig, show a picture of what kind of plant, then people are going to know. What it is used for, for arthritis, for a lot of things, like your stomach. We know a lot about these things. We got taught from when we were small, that is how we know things. What he [Daniel] said, I packed lots of water, I packed lots of wood for stories. We did not have any comics, we did not have anything to read. The only kind we have is the old-timers stories, that is why I know. Now if kids go to this movie they have to pay ten dollars, that is the way it is. They are going to have to pay a lot of money to catch something from me.

At that time we used to have to pay to get a story. They used to tell us the stories at night time. I know a lot of stories, but I have forgotten many. I know one word and I try asking a lot of people, but they know nothing about it. It has been a long time since my grandmother died. She died in 1929. She told me the stories and I still remember them. I did not put them down in a book or paper, I just listened.

Question For teaching kids, you need all day, schools are not like that. Your time is all cut up. As a teacher, should I fight this "cutting up" of school time? Is it better to have the whole day than to teach reading at nine, then math at ten ?

Daniel Tlen In school kids learn writing for one hour, numbers for one hour, go play in the gym for one hour, it is broken up all day. It is not just teaching one class all day.

Marge Jackson You should use one day to learn one thing, not too many things. They cannot learn that way. If you teach five different kinds in one day. What way are they going to learn more? They have to learn something more. If you want to teach kids, teach just one thing on one day and not too many things, then they can learn that way.

Daniel Tlen What is a good way to teach children and young adults to respect the land? A good way is by example, but I guess if you do not know how, then you cannot show by example. The first thing you have to do is to learn to respect the land yourself, then you can live by your own beliefs and you are along the way to show young people how to respect nature.

Harry Morris said something that is pretty important. He said that before you can learn to respect the land, you have to learn to respect yourself. That is very important. It follows that if you do not respect yourself, then you are not going to respect others, and others includes your environment, what is outside of you.

What is a good way to teach? From my personal experience, I remember when I was going to school, I think the single most important aspect, or element, or technique, or whatever you want to call it, that helped me get through school, was encouragement from others. It does not sound like much and it does not seem like much to say that you have to encourage people, students, young people, but in reality encouragement is a tremendously powerful device for teaching. The unique thing about it is that it is such a simple thing to do, so simple to encourage others. What is it that we are talking about? We are talking about the environment. When I was a kid going to school as a teenager I knew everything, but you really cannot see beyond a couple of feet of yourself. The world rotates around you. When I was sixteen I did not want to be in school any more. My uncle told me that when I turned sixteen I could walk up to the teacher's desk, put that book on her desk, and I could walk out of the school and never turn back. That was not a very good thing to tell me because I wanted to leave school. I was the kind of person that said, "What good is school? What is the good of learning medieval history? How is that going to help me in my life? Let me out of here."

On the other hand, key people in my life encouraged me to stay in school. They just told me that I was doing good and to stay in school. Just simple encouragement is all it is, words encouraging somebody. It has a tremendous amount of power, so if we encourage our youth to be more mindful of the environment, that is a good place to start. Kids really have a different learning style these days. You cannot just send them to their aunt or uncle for the day and get the aunt or uncle to teach them to hunt, or show them where to pick berries, or show them how to tan a moose hide. You cannot do that anymore, times have changed. Learning styles and expectations of youth have changed.

Another important thing to look at is, what are the expectations of youth today? I mentioned previously, that young people are very concerned with the global environment. We should encourage that concern, but at the same time they have a different learning style. We have to use television, we use the computer, we have to use interactive television now. The technology is here, the learning styles have changed, cultures have changed, cultures are blending. Some parts of society do not make sense, are in open conflict with other aspects of society that are concerned with environmental issues.

So on the one hand in our society we can have trans-national corporations raping the earth, but at the same time the home base for these trans-national corporations can be a democracy like Canada or a republic like the USA. They can go around the world raping the world, but have a nice home environment where they can live, where they have all the amenities of modern technology.

We have to meet the kids at their learning style and basically that is television and computers now-a-days. On the other hand, having said that, if we really want to learn about environmental issues, which is a global issue, we also need to go out and experience nature first hand.

I talked earlier about how space shuttles are a way of life now, we even have a couple of Canadians who went up into space. On the flip side of all that technology, it is unfortunate that we have to use all of that technology that tremendously biases our interaction with the environment, in order to teach kids about the environment and protecting it. It is a dilemma.

Being on the land and experiencing nature you have to be alone. When you are out there you have to have all of your wits about you, otherwise you die very quickly. It is interesting how we have a love for nature and we feel very strong about protecting the environment, but if you are not prepared for that environment out there, you are dead. You die within a matter of days. Anything can happen.

This is one of the things not mentioned earlier today, but one of the things that is very important to teach young people about safety. Teach them about how accidents can happen and how you have to be prepared in order to overcome accidents that happen to you, or to others that are with you. Anything can happen in the bush.

Remember last summer a lady got lost on the river here. Once she climbed up in a tree looking around for her friends, she fell and broke her back. She was laying there over night and they found her the next day. Anything like that can happen and if you do not know what to expect, you are putting yourself in a very dangerous situation.

Young natives like me, (when I was growing up, it is amazing how things filtered through when we were only concerned about playing), we actually learned a lot about safety. A lot of learning about safety is being aware and how accidents can happen to you and learning how to be careful; learning how not to do something without thinking about it before you do it.

There are a number of ways that we can develop awareness about nature, about the land.

I would like to talk a little about how Indians around here and other parts of North America and other parts of the world have a different world view, different than the world view that Western people have or non-indigenous people might have. I am talking about the shamanic view of the world which is completely different than the Western view of the world.

In the West, the culture that comes out of Greece and Rome and Europe in general was put over here, and has adopted a very materialistic view of the world. By that I mean they practice the empirical methods of science.

Science blinkers the scientist to look at something in a very magnified, focused manner. Scientists become experts of a very small aspect of the world. Then they know very little about the 99% of the world that is out there. Science then has to find a way to balance its ability to focus very intently on a given subject and at the same time it needs to be able to have the big context in order to place that very small, special bit of knowledge. The scientific world view makes us very critical about everything in general and places a tremendous amount of legitimacy in what it has uncovered. That bit of knowledge that science has uncovered becomes revered.

Science then is materialistic. The science that helped humans to develop the technology becomes very biased. It biases our perception of nature, and the technology itself is biased against nature, even though the things that come from science, come from nature and everything you see in here comes from the ground. Yet we like to think that humans made this. Humans did not make this, they did not create the wood or create the basic things that help to make plastic. Everything comes from the ground and everything has to go back to the ground eventually. This whole building in 10 thousand years will be a layer of dirt.

While science is a tremendous tool for uncovering things about nature, it is very limited because it does not allow you to see past the empirical method. On the First Nations side of this, they did not have the technology or scientific method at their disposal; the First Nations people here were primarily concerned with making a living on the land. The people on the coast, Vancouver Island or Prince Rupert, had a different lifestyle where food was very readily available. They developed a tremendous form of art and a sophisticated forms of clan structures. The natives of the Yukon are the opposite, they spent their whole time making a living and didn't have very much time for art; they couldn't carry around things they made. In fact, what distinguished the Athapaskan Indians was their ability to live on the land with just a few tools. They didn't need very much, they had their pack-sack, bow and arrow, some sort of knife to cut and a few tools, and that was all they needed to make a living. On the other hand, the Inuit had to have dogs and dog teams, they had more technology to carry with them.

We like to think of space as being out there, but space is right here. It's this ground we're walking on, it's that sunset you see in the evening. We are in outer space, this is space and you get more of a sense of that when you go up North above the treeline because there you are in outer space. You have to carry your environment like the space man. Rick

Kool was making that analogy and saying that maybe this is a good metaphor that we can use with the youth. You have to carry your own environment with you and be self-sufficient by yourself. It's not like being on a mountain where you have ropes.

What does the Indian have if he doesn't have the technology to build things like lights and vents? He has a perception of the world that is profoundly different from the Western person. His or her perception of the world comes from the spirits and science does not recognize the spirits. Science does not recognize the spirit allies that humans can take.

In modern times it sounds anachronistic to talk about shamanism but if you want to understand how Indians think, you have to understand what shamanism is about. You have to personally experience it. It's that experience that gives you different insight into nature and it gives you the insight that everything in nature is connected. That everything in nature has a spirit and therefore you respect the spirit in the tree, rock, the river, the mountain, the clouds or the weather. They believe that; and, it's a different way of believing in and looking at the world.

A meteorologist might tell you that there are low and high pressures and that's what makes the wind. Whereas, an Indian will tell you that the spirit is in the wind, that you can talk to that spirit and it will help you with the weather. It's not uncommon for natives to change the weather patterns. For example, if a big rain cloud is coming to you this way, you can do something to make it go around you.

Summary

Norma Kassi I know that a lot of you were welcomed yesterday by the traditional people of this land, the Ta'an Kwach'an and the Kwanlin Dun people and I would just like to extend a welcome to the people who came from as far away as Australia and Europe and places like that. Welcome to the Yukon.

This morning at seven o'clock I wrote down a whole bunch of stuff — modern Indian — and I feel kind of embarrassed because in our culture when we write things down while our Elders speak it is really disrespectful. I thought if I wrote things down before I came here maybe Harry will not give me heck or old people will not give me heck.

Anyway, I tried to think about what the respected Elders in the Tlingit people and the Southern Tutchone people and Tagish people and Gwitchin people would talk about today and I tried to summarize that. I brought knowledge from many different ways, many different people. I brought knowledge from people who I have worked with when I have travelled. I have brought knowledge from ancestors who I was raised with on my lands. And I thought if I tried to summarize this, maybe that is what people will talk about on the panel.

Well we did, we did talk about a lot of stuff that I tried to bring into this summary. If you will just bear with me, I am going to go through what some of the people have said this morning.

Carol Geddes was the first speaker and she talked about how difficult it is to learn from the indigenous world if you do not understand a lot of things about our people, that you must live it. I think a lot of the difficulty occurs because we have our languages, and a lot of our culture, and a lot of our traditions are within our languages.

I know from how I was raised, and being taught one language in the beginning of my life has now made it a lot easier for me to understand things. Understand the indigenous beliefs and shamanism and things like that which were brought here today.

Harry Morris talked about respecting yourself. To respect the land, you must respect the Creator. Respect the little tree because it has every right to live just like us. And you have to learn the white man's ways to make a balance, to create balance in your life. You have to know both ways, carry the Indian way in your right hand, white man's way in your left hand, that is what he said. Now I am beginning to see the balance in myself when I heard that this morning.

They talked about punishment. We heard two Elders talk about punishment. How we used to get spanked and how he was put alone in an attic without water and food, to respect that everything is connected to the environment. Everything in our life is connected to the plants, the animals, the bird-life, the fish-life and everything.

Marge Jackson talked about spanking and I remember when I was growing up, the respect for the red willow. If we did wrong — mostly breaking natural laws, disrespecting of animals, disrespecting our fellow brothers and sisters, particularly Elders, someone older than us — if we showed disrespect, then we had to go out and get our own willow. If we stole or if we lied, we were taught to go out and get our own willow.

"You are going to get a spanking now boy, you did wrong."

So I would go out and pick a good dry long one that would break easy if I got hit. I tried all different kinds of ways, but that is no good.

"You put that in the stove. You have got to burn that one."

So I go back out and get a big one, so if I am going to get hit they would not hit me with that one. I know, because they are going to break something.

"No that is no good neither."

Then I know which willow I have to get because that willow is put on top of the tent for us to look at all of the time. The connection to the red willow of respect that we had at that time was that skinny long willow and if you got that on the bum, boy that really hurts, you remember that one. So all of that is to learn respect. I know I got that when we showed disrespect to animals, to plants, to things around me and if I told lies.

We have to look at indigenous knowledge extremely carefully. We are afraid as indigenous people to share some of our stuff because it is so powerful, it is so intricate. Talk about shamanism and spirituality, we are afraid of it because we have been mocked. We have been laughed at. We have been abused because of things we have shared. People have disrespected it and that is what we are afraid of a lot of times.

How can white people learn from us? Those were some of the questions. Basically listen, we need to listen. We had an old person talking over there today and she spoke very low, way down here and the first thing that we wanted to do was to bring in a microphone. The next thing we wanted to do was to make noise and cut her off and say could you speak up? At home when we go to our Elders we talk and listen to them this close. We do not even look them in the eye, they talk to us that close. That is how we get the energy, that is how we hear our stories. That is how we are taught to listen and use our ears.

And talk about lots of patience with our Elders, I remember having to go to Elders and sit down in front of them and having to listen to them. We walk in their house and they know what you have done already. You come in there and sometimes they will just be quiet for two hours, not say a word to you. In the mean time you are just stewing up inside, and you are hurting, and all kinds of things are happening and that is what you are supposed to do. And that is called patience. Then after this long period you finally get it and all of your feelings begin to come out.

Daniel Tlen raised something very interesting, when a student is ready the teacher will arrive. Our Elders will not share things with us unless we are ready. If we are going to go to them and ask questions and not listen, they are not going to tell us very much. If you do not listen, then you are not ready yet; they can sense that.

Storytellers too, there are very few chosen storytellers in our nations, that are chosen, that have the very special ability to tell stories. Those are the ones that we tend to listen to very carefully. We have to work hard for what we get. We have to pack wood connected to the environment. We give the Elders fire. We have to get water for them. We pack water for them to get our stories. That is all connected to the environment, then you deserve it. You use a lot of humility and things like that to listen.

Lucy Wren talked about the language, how important it is and how difficult it is to learn Indian ways if you do not understand the language. I find that very difficult if I cannot hear my language very well. Then I find lots of things missing that I cannot learn. Today she talked about life being too easy and somebody raised that question. All we do is watch TV and things like that. How can our children learn and carry on our way of life, if life is made too easy for them?

Daniel Tlen brought up that woman were the most powerful teachers in our system, which is very true. I know in the Gwitchin we really respect the women and we really listen to them. We go to our aunties on our mother's side and our uncles and they are the ones that teach our children as they grow older. The younger the children, the older the people they can connect with.

Marge Jackson talked about the environment and how everything has to be respected. How when they used to travel lots, they used to walk carefully. You do not just walk over any plants, you walk on the ancient trails. You watch your step and in life we are taught to watch our step.

She talked about the persistent organic pollutants that are in her country. How bad it is now that she cannot even go out and pick berries wherever they want. I call that the silent killer. It was left behind and is coming into the arctic, the persistent organic pollutants that are now showing up in our food chain. It is devastating to indigenous people all over the world and here in the Yukon. In our fish and in our waters.

Again she talked about letting the old people take care of the kids. The kids need to connect with Elders.

Daniel Tlen made a really interesting point about encouragement. Teachers need to encourage people. There is one of my teachers sitting out here. I remember when I was ten years old or maybe even younger, eight years old when she came to our village. We had teachers that tried to Christianize us, tried to assimilate us, tried to change our whole way of thinking, but we had this one teacher come to

BEST COPY AVAILABLE

our village, her name is Mary. She is sitting back there. She took us girls and she taught us to look at ourselves as women, because we were always living hard on the land. She taught us how to make cookies. She welcomed us into her house, she encouraged all the good things that we could learn about the white people, their ways and the things that they have that we could use. I will never forget that because she played a vital role in my upbringing. She welcomed me and she encouraged me, that sort of thing is so important. Do not think that you are bad because you can only understand your language, or you have an accent, that sort of stuff. She encouraged the womanness inside of me, that you are more than welcome in this society. She did a lot of that and I respect her for that. Daniel brought that home when he said that too. Encouraging young people and all of their skills in them and all of their good stuff.

Daniel and Carol talked about science, how it tried to control and how it took away from the holistic point of view of indigenous thinking.

If you will just bear with me, the summary I told you about I would like to give it to you. These teachings and perspectives are not my own, they come from other people, they come from friends and knowledge of people living in one place for untold generations. I was raised in Vuntut Gwitchin, we are called Caribou People of the Lakes. My Indian name is *Gwatla Ashi* which means "One who travels far with really messy toboggan and torn clothes, but her food, his food — my grandfather, his food — was good." That is my Indian name and in all of our Indian world, a lot of us have Indian names. It means that we have a connection and a partner in the spirit world that will guides us in our endeavours, wherever we go in the future. That is part of our culture, one of our ways.

I was raised in Old Crow Flats, a place where there are thousands and thousands of lakes, where it is very safe and very secure. That is where I was raised and only one language was spoken which was Gwitchin. From the time I was born and even before, I was taught a lot of things. I really value that today. We lived with the animals and the birds. We trapped, we hunted, and we worked with the elements to survive, sometimes in seventy below weather. We talked about that today, you have got to respect that, respect the elements.

The caribou is the very essence of our life, our survival on the land. We use everything off the caribou. Clothes, we had clothes from it. I had caribou skin jackets and caribou skin pants, moccasins, everything like that. That is the kind of clothes we had. We did not have very many clothes from outside except what the missionaries brought in and gave us. We used the caribou skins for our blankets and parkas and pants. The bones were used for tools and the hides were made into spring and summer and all kinds of seasonal clothing. Babiche and rope were made from the skins. Dog teams were used for transportation. The insides of the caribou too were used. The caribou would eat moss and that moss is the stuff we use now to make tea with to treat cancer. The Tlingit people use that too. We have all kinds of similar beliefs as you will hear.

The red willow we use for poles and that is what the caribou eat as well, the buds of the red willows. People wonder, "Where did those people in the arctic get their vegetables?" Well, we got them from the insides of the caribou. The food that they ate. The sage that they ate, we use it now for pains, for childbearing. We made tea from it, and we use that for pain. Another different caribou moss, and the spruce that the caribou eat too, we use now for asthma and congestion or breathing things. All of that came from the caribou as people of the arctic.

For soap, we did not have much laundry, but my Mother broke up the bones and melted grease and oil from the caribou meat and we mixed it with ashes and we got our soap.

The bones of the caribou were ground up and that is what we fed our babies. Mother with breast milk fed the babies with bottles. Women drank a lot of that and that is how the babies were raised.

In that time too we lived with natural laws. Laws that we talked about today. Laws with which there was no debate. We just could not debate these laws. Understanding of these laws, and familiarity with our surroundings — our environment — was as familiar as our mothers' faces. It was just everyday life. We had to live by these laws. We had no word for wilderness. I guess the nearest word we could find to wild in our language is freedom. That is universal amongst indigenous people. Our lands did not become wild until other people came in and said they were wild. We did not think like that. Within inherent rules of obligation, our lands did not become wild until others came and made them that way. These places were places of peace and security.

Animals were our kin, our relatives and we communicated with them like we did with our human brothers and sisters. From the smallest of insects to the largest of animals, bears, moose, caribou, we then as equals. On a scale, we were on the bottom of the scale when we talk about respect for animals. When we took from them, we paid. We gave thanks, we celebrated. The birds ate the insects, other bigger birds ate the smaller birds and it goes on and on. We eat the caribou and moose and

BEST COPY AVAILABLE

other animals lived off each other as well. We are a part of that animal world, part of that cycle. We had every right to live that way, because that was our environment.

We had to respect. We talked a lot about respect. We were taught that when animals were near us we did not look them in the eye, you do not do that. If you do not need them, then you let them go by. We were not even aloud to talk about them. We do not talk about animals, like we do not say, "Gee that moose was real beautiful, and it had big horns," that sort of thing. It is so disrespectful to do that because they hear us. They are there. They are listening to us. That is how we believe there is a spiritual connection. The animals' energy is always with us on the land and everywhere we talk, so we do not even talk about them.

I have seen consequences of things that happen to people disrespecting these natural laws. The mouse is going to be one of the most powerful animals, smallest animal in the world and in the Indian world is going to be the most powerful animal one day, to be respected. Now look what is happening to our mice now. We have a problem. That is all starting to show up now. Our Elders taught us that a long time ago and now things are starting to surface.

We had a tremendous amount of animals. We have lots and lots of caribou that still come and visit us every year, but these are going to end. The fish will end. Birds will end. Those are some of our strong philosophies of our people, if we do not start doing something about them now, they will end real soon.

We live in domination and we feel the need to dominate all of the time. If we cannot control something then we destroy it. That has happened to many animals, and human life, and the lessons we learn continue. As indigenous people we are not asking for pity, all we need is to be listened to, to be partners, to make decisions for the future, to be partners in making those. We believe that the Creator, the great energy, put every race of people here with a responsibility. I used to hear my grandmothers and grandfathers talk about, "The yellow people and the brown people, when I was living out on the land I did not see them, but now I sure see that."

We believe that everyone has differences, profound differences that have to be respected and that every race of people are indigenous to somewhere.

The number four is very sacred in our culture. We have the four directions: east, south, north, west of the globe. The east brings light where the morning star lives. It is the place of the red people. Later on as I travelled around to different places that I began to put their interpretations together and these are some of the different interpretations I found from other places around the world, and I try to connect them back to the Gwitchin and what I have learned.

The south brings the summer and makes things grow. That is the land of the yellow people. The west is where the great thunder comes from and the great rains and that was the black people. The powerful north with the strong, cleansing winds was the power of the white people. Then there are the four elements that we talk about, that we can not live without. The water, the fire, the air and the earth. It is very simple, we cannot live without those things. In the Indian world everyone believed that. No matter where you go, to the Maoris, they will say the same thing. It is believed that each race of people had a responsibility and a duty to care for these elements. We know full well that a lot of us have given up on our responsibilities. The great waters were to be cared for by the black people, the fire the yellow people, the air the white people and the earth by the red people. All of us had these responsibilities we believe from the beginning of time. A lot of our stories come from those.

We really worship the sun. People ask us what do you mean by spiritual connection to the earth? Well we can not live without the sun. We worship the sun, we give thanks for him everyday. We call him the Grandfather, because he is very old. The moon is our Grandmother. We respect the moon as very connected to the Mother and the women of the world. We give thanks to them all of the time, we say thank you every time we see them. We have to.

The moon, we believe, walks a spiritual path and is given that responsibility to walk the spiritual path. She is the head woman and the head of all mothers of all the nations, of all grandmothers. Every twenty eight days she completes her journey and she renews herself. All negative stuff is outcast, and all the new stuff is rejuvenated again. That is sacredness of all women and that is why we respect our women, we respect our mothers and our grandmothers. That is why we have the law of the women being the most powerful, because without the women there is no life. When we are in our time as women, we are most powerful and we are to be respected. Also I guess when we are in our time we do not want people to mess with us because we are too strong. That is the time when we need to shed our tears and express our emotions and to be left alone to do our own thing and to be understood

BEST COPY AVAILABLE

and respected for that. That is the earth and that is how we treat the earth.

We do not go near our men during that time because we have very powerful powers. We stay away from them and that sacred law has been broken a lot of times. As a result there is a tremendous amount of disconnection and consequences able to provide adequately. Over the years women have been excluded and this has created an imbalance in the competitive nature of men. It is different now, we have to be up-front in making decisions, particularly about mother earth because we understand her better. We know the pain she is going through. We understand the pain it is to give birth and to renew life. We understand that kind of stuff, so women really have to be up-front in environmental work — grandmothers.

I had lots of opportunities in my life time, and a lot of what I learned came from my Elders. I have chosen a lot of different paths along my life time. I tried to experience other paths and places of confusion where I chose to go the alcohol route and all that kind of stuff, but I always ran away. I was an elected politician too. I experienced decision making over fancy steaks and fancy dinners, closed door decision making, and promises made and unkept, but I ran away from that too.

Another thing that I ran away from, which our panel talked a lot about today, was the educational system. A lot of my teachers are sitting here today and they know about me running away from school. All of the false history that was trying to be taught to our people, and myself, I ran away from that. I did not want it. I did not understand it. If it did not fit with what I was taught in the beginning when I was being raised, I did not think it was good enough for me to carry around in my head to boggle up my mind. Then there was the residential school and that did a number on us, and we ran away from that too.

We talked about science today. How science has just broken things up and focused on one thing, like Daniel put it. That played a big number on the way our people think. The ways of conservation of our own people, how to respect animals, how to look after them in our environment. We have to look at them again. Just let them be. Do not try to control them. Do not try to manage them. Just let them be the way they are, because they are not pets and they are not there to be managed. We really differ with some of the scientific methods.

I hope that I have captured a lot of what has been said here today. If you have questions, the panel is open for more questions, thank you.

Question Can you tell us about the "respect" that First Nations have for nature?

Daniel Tlen If you think that nature is alive not inanimate, if you think that there are spirits in the moose and the caribou and the fish, the gophers and the rabbits, the sheep, then you have a respect for those animals and those things, the trees, the water. It engenders a respect. Of course there are a lot of native people who were never taught that, or never figured that out for themselves, that do not have the same view that I do, for example. I am just telling you this, because if you do not understand where the native person is coming from, then it is very difficult to teach young people about care and respect for nature.

Native people developed all kinds of practices to show their care and respect for nature. I do not know how you can do that in the Western world without having experienced it. For example, back home where I come from, if you kill a moose, what you do is you make a fire when you start butchering. You make tea, like at home, you put on a kettle. So when you are in the bush and you have moose, you put on a fire and you put on some tea. Then you start to butcher up the moose, but before you start to do that — what I was taught to do — you cut out the eyes of the moose and you stab them with the knife, then you throw them in the fire and you burn them. Among the Tlingits, when you kill a bear, you do the same thing, you take the eyes out, but you dig a hole underneath a tree and put the eyes down and cover them up. Why do they do that? My grandmother told me the reason you do that to the eyes of moose, for example, is so that the moose does not see what you are doing to its body. He does not see you cutting it up and butchering it.

I had one of my students ask how did the Indians figure that out? Why did they do that? Did someone do that first then did people start to copy them? I told them another story about that. For example we have tremendous respect for bears. That does not mean that you should not pack a gun in the bush just because you respect bears. I know lots of environmentalists who like to hike around in the bush just for the pure enjoyment of it. It is good to enjoy the bush, but it is not good to be killed by a bear. That is not enjoyment of the bush when you are being killed by a bear, right? So if a person packs a rifle around in the bush, it should not be a problem. Packing a gun in the bush is just common sense because you are just taking a precautionary measure.

In Alaska last week there were two hikers who came upon a bear eating a moose and the bear killed those two people, just like that. The bear did not

BEST COPY AVAILABLE

know; he was eating his meat and thought that they were going to take it away from him. He does not know you and he does not care for you either, really, when he has got a moose. Those are the kind of experiences that help you to have respect for nature.

This is why native people do things in different ways, because they see the world in a different way. Physically we all see the world the same way. We all have eyes and ears, we all have the five senses, but I think what distinguishes indigenous people, who view the world from a shamanistic point of view, is that they feel that everything is connected in the universe. When you go and take the moose, that moose was there for you. When you take the salmon, that salmon was there for you. That is why you respect that moose or that salmon. Even though you have to kill them, you still have to respect them.

There is another pair of concepts that are hard to understand when you put them side by side. You respect the moose, but you kill it. Respect does not mean that you let the moose go, or you let the wolf go, or you let the caribou go, that is not respect. It shows some kind of a concern, respect is when you use your resources to their fullest extent and you are appreciative about it.

One of my grandfathers, Albert Isaac, he was quite an old man, but he hunted as long as he could. He was bothered by a game warden up by Burwash (that is where I am from). The game warden I guess was telling Grampa Isaac that he shot a moose out of season. My Grampa Isaac got very upset and said, "What is the matter with you white man, when you take moose, you just take the horns and one hind quarter. When Indians take moose the only thing we leave behind is the shit and the guts."

That is part of the respect, when you take something and you use it all and you share it and you are thankful for it, that is respect. I think that is all I would like to say for now, thank you.

Question How do we show respect in our daily lives?

Daniel Tlen Even when you go to the supermarket to buy ribs, or carrots, vegetables, it is important to thank the beef and to thank the vegetables and to thank the pig. I often think about a remark somebody made that Canadians are so polite they even thank the elevator. That is not polite, that is just respect. I thank the elevator too when it takes me downstairs or upstairs. I think that is an Indian way to thank things in the world. When I was a kid I was taken away from my home and raised up in a residential school and hostels for twelve years. I really lost a lot of traditional experience and home experience, but I was also encouraged to learn by my grandmother. She said, "Make sure you do well in school and learn about the white man's ways because you are going to need to know those different ways in order to do well in the world." Maybe I can use that same council and say that it is probably useful, and even wise, to learn about the Indians' ways and to develop a different world view. If you learn about the native world view, it does not have to be incompatible with the technological view of the world, or the scientific view of the world. They are not the same thing clearly, but maybe they are parallel things, they can co-exist side by side. To make a long answer short, just being grateful for the things we can get from the SuperStore™ or things we can get from Beaver Lumber™. Just being appreciative about it because everything comes from nature. If we engender that kind of respect for things, then I think that will help our personal attitude toward the world. I started off by saying that teaching by example is probably one of the most powerful ways of teaching young people. If we are respectful of the environment and of things, then we can teach young people to be respectful also. It does not mean that they are going to learn, but at least we can try to teach them.

Carol Geddes It became clear with a couple of comments this morning, I think Marge mentioned that how it is very difficult to discipline children now. Something that we are really having to struggle with in First Nations communities is how we make consistent teaching of children — from the ways that the Elders would like to teach them and the way that schools encourage children to learn. I think there has been made mention several times today about children being spanked, and I would really like to put that in perspective. I do not think that it is always the case. Please do not get the idea that we are really, really big on corporal punishment, that we are constantly whipping the kids or something, because certainly in my family, we were very rarely spanked. We were punished a lot in different kinds of ways for all kinds of transgressions. Now what is happening to a lot of children is their parents were people who were in mission school and who missed out on a lot of training from the Elders. There is a lot of confusion on how to raise the children and there is, because of the various traumas that people have suffered, a tendency sometimes to indulge ourselves. So this has created a very serious tension between Elders and people parenting children. It is one that we are struggling with very hard. There is constant talk about it at general assemblies and meetings about how do we deal with this very serious problem. I think it is very important that we are talking about it. There has been some wonderful examples of that turning around in recent years.

We had a general assembly at Teslin amongst Elders last year where some children broke into a tent and stole things. It was incredibly heartening to see what happened after that. What happened was that the Elders decided to call the children forth and it was almost like a small court that they held, where they made those children accountable in front of the whole assembly. Elders got up and spoke. It was profound. It was an absolutely fabulous thing that happened. It really recalled a very ancient system. It was so fortunate in many ways that those children broke into the tent and took these things from these people who were just travelling through. The children stole things from them, treats and that kind of thing. The visitors were called for. They were apologized to on the part of the entire nation, then the children had to go around and take a collection from everyone at the gathering and then they had to present it to the people who were transgressed against. It was really a marvellous thing that happened. So there are times like that — where people talked about it for a long time afterwards because it was incredibly reinforcing. We do have some return to those kinds of values, but it is at present very frustrating to the Elders that children are not being disciplined and not being taught the same kinds of ways as before.

Norma Kassi I am just going to pose that question to our Elder here to see what he does with it.

They asked us how long time ago when you had to pack wood and pack water before Elders tell us stories and give us council. Now-a-days we do not pack wood and we do not pack water, because it is all there, so how do we get Elders to talk to us and to teach us?

Harry Morris The way I look at it is to do the traditional way is to take them out camping. You have more of a lifestyle and that is where you get the chance to communicate with them.

Norma Kassi We do that a lot in our culture now-a-days. We have our assemblies, our meetings, we take the Elders to the camps with us. They love doing that, it is their surroundings, that is where they get a lot of peace and quiet and are able to tell us different things and teach us. It is environmental as well in terms of getting information from Elders. Now-a-days we go to their homes. In Old Crow, if I need council from Elders I bring them something. Bring them food, bring them tobacco, bring them a nice handkerchief, bring something to pay for what you are going to get. If they choose to, then they will give it to you.

Question How would you explain the concept of "respect," or the meaning of "respect"?

Daniel Tlen Respect is an English word as we know it, probably from some Latin derivative, but the same concept does apply in native culture. The idea of respect is quite different because for one thing the West has a patriarchal history. If you take Judaism, for example, (there is a very strong under current in Canadian society), they have a patriarchy which goes back several thousand years. In Europe you have the different monarchies, so that the social structure which calls for respect was between superiors and inferiors. Where as in the native culture, we have the same concept of respect, but it does not come from superior/inferior relationships. Well maybe it does, because as humans we feel humiliated and humble by nature and so we have to respect her. I do not know if that is the way it really is, but the concept of respect still is in the native culture. That respect is manifested in many different ways, ways in which customs have developed. How you treat moose, or how you treat bear, or how you treat medicine plants. I think the concept of respect is there.

Carol Geddes I think that we have to be very careful how we use it ["respect"]. I think we use it in a very obedient sense. I think that something that is very important from a First Nations perspective is that we understand it. I asked a similar question of someone who knows the Tlingit language very well. Apparently it does not have a very precise definition in translation — the way it is used in English. It is more like awareness. It is more like knowledge and that is a very important distinction, because it is not like a moral law, it is more like something that is just a part of your whole awareness. It is not something that is abstract at all.

One Elder told me that before you are a certain age, (she was trying to describe how you were not punished for a certain transgression), you are thought to be what she called "not smart." It is only when you get smart that you can then be held accountable for the things that you do. What she meant by that, I believe, is the same kind of thing, getting a certain kind of awareness. And so I think there is a real subtle difference between the English translation and what the indigenous languages meant by that word.

Question How would you describe "respect" for nature in your language/culture?

Norma Kassi When I think about it in my language, when I try to translate it in my language, it means "tied to animals." You have to take care of them, you have to walk with respect and you have to treat them well. You do not just squish out that spider because that spider could have lived thousands of years before you have. They are caretakers of your environment and you look after that thing. There is a purpose for it. You have to rethink situations before you do anything. Think about the whole thing about whatever you are going to do before you do it or say it. Think about it real good before you say it. When it is translated there is a whole big story that goes with it.

For people, we always respect people as our brothers and sisters. We take care of people as our brothers and sisters, particularly older people. They demand respect. They have to be respected. They have to be taken care of and re-looked at and re-valued and be a part of us. Without them we could not survive.

Daniel Tlen I would like to relate a little short story along those lines. Elijah Smith, who was a very strong native leader in the Yukon, had a chat with me one time. We were talking about spiritual things, we talked about respect for animals that we killed.

He said, "You know I have been thinking about that for a long time and you know the only difference between me and the moose is that I have fire . . ."

So what does that say to me? It said to me that he had a tremendous amount of respect for the moose and even viewed the moose almost as an equal to himself in terms of his soul, his awareness, his spirit.

I want to make the point that in stories, the old stories, they always say that a long time ago humans and animals were the same. They were treated as equals, they were on par with one another. I think they illustrate the way that native people do have a respect for animals in a sense that they are like people. If you shoot a moose or a caribou, or a sheep, it is just like killing a person, except that sheep or moose or caribou was there for you to use to stay alive. That animal was there for you to use so we use it respectfully. That is the way they came.

Question And how do you show respect for the plant world?

Daniel Tlen It is the same for medicine plants or food plants. When you take a plant you should leave something to thank them. Leave something there to show that plant spirit that you are sincere about killing that plant in order to live.

Marge Jackson . . .

Daniel Tlen She is talking about a plant called False Hellebore. It grows up on alpine meadows and is a very strong plant. It is a very powerful medicine plant. She told you about how you are supposed to treat it. I know the same thing happened to another person in Carcross. They went to get some False Hellebore on a mountain and they just pulled it out any old way and put it in their packsack. She said that it rained and thundered and hailed and snowed and everything. It shows you how powerful plants are. Plants are very powerful, insects too. They are powerful spirits. That is why if you do not know about it, it is best just to leave it alone, because it is like opening Pandora's box. If you do not know what you are doing, you can expose yourself to very serious problems. So that is why they respect those things.

Harry Morris When you take a plant, say you are taking a plant for any purpose, say for medicine, before you do it you have to talk to the plant. Like Daniel and the Elder over here were explaining to you, we believe in the spirit of everything. We believe that the tree has a spirit, the flowers, the leaves — everything has a spirit. The water has a spirit. The Elders have taught us from generation to generation what has been taught to us. They tell us what medicine is to be used for certain kinds of sickness. Say you have TB, or you have cancer, or some kind of arthritis, you name it and the Elders would know what kind of plant to use. But before you take the plant you have to put tobacco. Tobacco has a powerful spirit, therefore you take a cigarette or any kind of tobacco and you leave it with the plant. You tell it what you are taking it for. You are not abusing it, you are using it to help you.

Question [about respect for animals]

Daniel Tlen It is not only important to know what to do, but what not to do. About animals, what you are not supposed to do is joke or laugh or think about animals. You are not supposed to be funny or make funny remarks, or try to put them down or be disrespectful.

One of the most powerful animals in this part of the country, of course, is the bear. It is probably understandable why we have so much respect for them, because they are so awesome. They are fearless and can be very dangerous. We also we were taught to talk to the bear. You never know really what to do when you face a bear in the bush, but the Indians were taught to talk to the bear, talk out loud and tell him what you are doing, "Look, I am just passing through your country, I am just trying to make a living. I will leave your gophers alone if you leave me alone."

So we are taught not to make fun of animals. Never, never, never do you make funny stories about bears, you are taught to be serious. When you go in the bush he will get you for that. You are not supposed to make fun of them. You are not supposed to talk about them in any bad way at all.

Even fish, there are stories about that. Some kid was making fun of fish and he fell in the water and the fish took him away and he lost his parents. After a long time he came back — like the salmon four year cycle. Things like that, what not to do, are important.

In the Western world have we have very little respect for animals and nature in general, so we are very flippant about nature in the Western world.

Kids are flippant about things without knowing, so that is why you teach them not to do that.

Question What about ranches and domesticating animals?

Daniel Tlen It is so difficult to ranch. The only animals people have are horses. I do not think that is an issue.

Norma Kassi Some of what I was taught [about] disrespecting things were, for instance, the caribou herd that comes to our lands. The first caribou that come are usually the oldest of the leaders. They have done that for thousands of years. They led the herd to the calving area to calve. Our people never took those. They let them go by and then we took the next bunch. We only took a few from that bunch and then let that bunch go. I talked about natural laws, if you do not respect those, then the caribou will not come back next year. Much like the salmon. Our women do not swim during the time when the salmon come, we stay out of the water, because that salmon may not come back the next time. We have all of these spiritual laws that are connected. Then we look at it in a global context. We talked about how we disrespect — well, just look at the air. We shot a rocket up through the ozone, the shell that protects us. It is torn, it is being polluted, the hole is getting bigger. We disrespect the animal life on earth and now we are running out of food. We do not have enough food. It is very easy to find disrespect if you look at it in that context.

Like Daniel said, you do not ever laugh at animals. Like I said earlier, we do not even look at our animals. They are just there, we do not even talk about them because they could hear us. That is what we believe. Now people take pictures of them, collar them and treat them like pets, like something that is beautiful. It just does not fit, whereas we treat them as something that is higher than us, that is to be left alone and taken only when it is needed. A lot of our own people have gotten away from that. We talk about controlling animals for our own good. We have done that. I take full responsibility as an indigenous person for that, because our people have done that. We have grave consequences as a result. We try to manage animals, we should be managing ourselves.

Daniel Tlen Can I tell a little story just to wrap up? My grandmother is still alive, she lives in Burwash. In the early seventies there were some astronauts that the local priest, Father Huijbers, brought from Anchorage and Fairbanks to Burwash, then they were to come to Whitehorse. So I was in a restaurant with my grandmother in Burwash and the priest introduced the astronaut to me and to my grandmother. Father Huijbers said, "This is the man who flew to the moon and walked around on the moon." My grandmother tore a strip off of him.

She said, "What are you guys doing fooling around, walking around up there? You changed the weather, the weather is no good now."

Here I was, just a teenager, I was holding the astronaut in awe and here my grandmother just tore a strip off him, she had no respect. To her it was a very real thing. She was very concerned that we had tampered with changing the weather patterns on the earth. To her that was a form of disrespect.

Bob Jickling First of all I would like to thank our Elders and other panelists for sharing their stories. I think we will all have to go and think about what those stories mean along side our stories, and try to generate some more possibilities and perhaps return to hear more stories. Thank you all very much, massi cho.

Relational Modes of Knowing:
Learning Process Implications of a Humane and Environmental Ethic

David Selby, International Institute for Global Education, University of Toronto

Human-animal relationships, animal liberation, animal rights and welfare, the similarities and differences between humans and animals — these are issues at the heart of the field of humane education. Proponents of the field, however, have ambitions that go far beyond consideration of humanity's relationship to non-human animals, seeing their work as contributing towards the promotion of peace and justice within and between societies and responsible planetary citizenship. In recent writings,[1] I have explored the overlap and tensions between humane education and the fields of development, environmental, human rights and peace education. In this paper, I consider the processive implications of humane education.

Goals of humane education

An overview of the academic and professional literature on humane education[2] suggests that the field embraces four broad learning goals: the nurturing of a biophilic (life-loving and life-affirming ethic); consciousness of interconnectedness; sensitization to values and perspectives; and a proactive commitment to democratic principles and processes.

Biophilic ethic

Under this heading falls the cultivation of kindness and compassion towards human beings and non-human animals, respect for the inherent value of natural environments and all living things, a concern to maintain biological and cultural diversity, a reverence for the beauty of the Earth, its people and other life forms, and an outright rejection of all forms of cruelty, exploitation and oppression. Encompassed, too, are: self-esteem building; a commitment to developing individual potential in its complimentary bodily, emotional, intellectual and spiritual dimensions; and a readiness to see learning as a journey without fixed or final destination in which challenge, uncertainty and risk are inevitable (and, although sometimes only in retrospect, welcome) features of any process of personal growth and transformation.

Interconnectedness

Under this heading the learner acquires an understanding of systems, of how phenomena and events are bound up in complex, dynamic and multi-layered relational webs; of how natural and human-made systems interact; of how human decisions and actions often adversely affect other animals and the natural environment and then rebound with detrimental, sometimes disastrous, consequences for human communities; of the consequent need for sustainable, humane and ecologically-friendly (SHE[3]) lifestyles; of how the well-being of future generations is also deeply dependent upon the choices we make and the actions we take; of how people are part of nature and share much in common with non-human animals. Under this heading, too, the learner comes to understand how her health, well-being and sense of self both influence, and are influenced by, the condition of the planet.

Values/perspectives

Under this heading the learner comes to realize that she, like others, has her own particular perspective that has been shaped by factors such as age, class, creed, culture, ethnicity, gender, ideology, language, location, nationality and race. She recognizes that her understanding of animal-related, environmental and other issues will be significantly extended through openness and receptivity to other perspectives, that such receptivity can be profoundly liberating in its challenge to previously unexamined assumptions. She understands that underpinning any perspective (including her own) is a value system which demands examination and clarification, and that the challenge of different perspectives will often also involve a values challenge and, perhaps, a values modification. Also embraced by this heading is the complementary development of critical discernment with regard to values, beliefs, perspectives and the media.

Democratic principles and processes

Under this heading the learner commits to democratic values such as respect for reasoning; acceptance of diversity in ideas, opinions, perspectives and practices; concern for the welfare of others; peaceful and creative resolution of conflict; and fairness, equity, justice and freedom. She also embraces a conception of citizenship that is multi-layered (local through bio-regional to global), that encompasses the notions of intergenerational equity and accountability, that is active and participatory, that no longer leaves animals and nature outside society's "circle of compassion." In preparing for active citizenship, the learner acquires the confidence, mindset, insights and skills necessary for effective and responsible change advocacy and change agency.

This paper will argue that the realization of these goals calls for forms of interactive, experiential and action-oriented learning to be given prominence within warm, open and democratic learning environments.

The medium is the message

Marshall McLuhan's dictum, "the medium is the message," provides some valuable insights when applied to the classroom. Picture a classroom in which a peace educator, concerned to foster peaceful attitudes and allegiance to democratic, peaceful, change processes, lectures to her class on examples of non-violent change movements in contemporary history. The occasion is marked by absence of any information/opinion flow between those present. In such a learning situation, the praiseworthy nature of the topic notwithstanding, the teacher's goal (and, perhaps, her credibility) is undermined by a critical disharmony between medium and message. Or, put another way, two contradictory messages, one overt, one covert, are received by the students: the overt (the content of the lecture) saying that peace-oriented values matter very much, the covert (the unidirectional and non-participatory nature of the session) signalling that peace-oriented values matter very little. The intentions of the teacher are likely to be more effectively realised if the medium is constructed so as to synthesize with, and reinforce, the overt message(s) of the learning program.

Similarly, the humane classroom necessitates a harmonization of "message" and "medium." If some of the principle "messages" of humane education concern compassion, kindness, harmony, justice and equal consideration, then these need to be reflected in the climate, ethos and quality of relationships evident in the classroom. In practice this means a range of concrete things such as emphasis on dialogue between the students themselves and between students and teacher, a valuing of the contribution all can make to the learning process, co-operative learning, a decentralization of sources of power, decision-making and initiative-taking within the learning community, and sustained commitment to esteem-building and group-bonding processes within learning programs. The concept of inherent or intrinsic value, central to the humane educator's perception of all living things, likewise calls for an honouring of the insights, experiences, perspectives, skills and qualities which individual learners bring to the classroom.

The humane teacher's commitment to ecological principles also has processive as well as contentual ramifications. Drawing upon those principles, the teacher will seek to create a classroom in which the concept of interdependence is enshrined within co-operative learning situations and in which a diversity (ecology) of teaching and learning approaches are offered.

Valuable insights into the question of congruence between medium and message in the humane classroom are offered by the field of political education. Political educators refer to learning *about*, learning *for* and learning *in* (or *through*). Learning *about* is a knowledge-oriented process concerned with the assimilation of facts, concepts, data and evidence. Characteristically, it involves a vertical or top-downwards relationship between teacher and class. As an exclusive approach to realising the goals of humane education, dissonance between topic and process will almost certainly arise in that humane issues will be addressed using teaching techniques and classroom dynamics that fall short of the humane. Learning *for* places the emphasis on skills acquisition. Hence, learning *for* a humane world will involve, for instance, developing skills in communication, co-operation, decision-making, empathy, negotiation and change advocacy/agency. In the process, knowledge goals remain in place but lose their primacy. As skills are only developed by practising them, the classroom inevitably becomes more participatory. In consequence, there will be greater harmony between "medium" and "message." Learning *in* or *through* humaneness takes matters an important stage further. The knowledge and skills elements remain but, in addition, the precepts and values of humane education are reinforced through the climate and environment of the classroom. There are high levels of participation, interaction and dialogue. A premium is placed upon caring, sharing, trusting relationships; on genuineness. The classroom is a kind place; it is "a friendly classroom for a small planet."[4] Both the overt and covert curriculum promote and reinforce humaneness.

Classrooms of affirmation

"Self-esteem," says Nathaniel Branden, "is the reputation we acquire with ourselves."[5] For Dennis Lawrence it is the individual's *evaluation of* the discrepancy between their self-image (what the person is) and their ideal self (what the person would like to be). For a child, that evaluation will crucially depend on how significant adults in her life react to her level of achievement. Support spiked with "an optimum amount of pressure — just enough to cause the child to care but not too much so that he/she becomes distressed" will help maintain a high self-esteem whilst overanxiousness or overzealousness on the part of the adult will breed a sense of failure that easily becomes generalized (low self-esteem). Teachers are, thus, in a pivotal position to influence level of esteem positively or negatively.[6] Theirs is a heavy responsibility.

There is a vast body of research evidence demonstrating a positive correlation between self-esteem and achievement. The child enjoying high self-esteem is likely to be socially and academically confident. She will have retained an eagerness for new learning and new challenges. The child with low self-esteem will lack confidence and will tend to shy away from social and learning opportunities in the expectation of failure or humiliation.[7] Jack Canfield and Harold Wells have developed "the poker chip theory of learning" to explain the "extensive and overwhelming evidence" that cognitive learning increases when self-esteem increases: learning is a risk-taking business, the more poker chips (the higher the self-esteem) a student has, the more prepared she is to take chances, to risk setback and failure.[8]

If the student with high self-esteem is likely to achieve more and be a more confident risk-taker in her learning, she will also probably be more altruistic and positive towards others.[9] Negative self-image is likely to be displaced into negative attitudes and behaviours to other people in the near and wider community. Priscilla Prutzman *et al.* argue that "poor self-image is at the root of many conflicts that exist in school today," on the grounds that it is difficult to feel positive about others if we cannot feel positive about ourselves.[10] A body of research on primary-age children, adolescents and adults indicates that positive self-esteem correlates strongly with indicators of pro-social adjustment such as caring, generosity and sharing.[11] Strong links have also been identified between commitment to democratic values and processes and level of self-esteem. Edward Cell postulates that "perhaps the dominant factor in sapping our courage to stand against injustice is the erosion of our sense of worth. The more we question our worth the more easily we are controlled."[12] Barbara Schubert and Marlene Bird write: "A good self-image and a feeling of self-worth renders one capable of self-determination . . . a keystone of a true democratic society."[13] High self-esteem has also been found to be linked, in high school students, with a preparedness to take action if faced with challenge or crisis, as against an attitude of resignation, despair or expectation that someone else will confront the problem.[14]

In the field of animal companionship studies, there is an abundance of research literature on the therapeutic and esteem-building effects of close contact with animals, especially pets. Children who are shy, isolate or aggressive, who have suffered abuse or neglect, who are disruptive or tend to truant, or who have learning difficulties, can be positively helped through caring, and being responsible for, an animal.[15] The opportunity for non-threatening, non-judgmental, non-verbal, yet highly tactile, companionship can be vital in helping a child regain a sense of self-worth and the ability to relate more easily to others. Teachers at West Humber Collegiate School, a high school in Etobicoke, Toronto, testify to the very positive effect of introducing a range of pets into the school: reported cases of conflict and vandalism declined markedly and a greater sense of community become evident across the student body.[16] At Westmount Public School in London, Ontario, the three 1994-5 grade 7 classes went through a process similar to that described in the activity *Animals are for always* (Appendix 1) during the first two months of the school year, involving parents, veterinarians and representatives of humane organizations in their regular sharing circle sessions as they moved towards a decision on whether or not they should have pets in class. The consultative and decision-making process, and subsequent presence of pets in each classroom with all the attendant delights and responsibilities, appears to have had a pronounced positive effect. The self-esteem, confidence and articulateness of some students rose dramatically; group cohesion was high as classes exercised self-discipline in accordance with their *Caring* checklists and with codes of class rights and responsibilities that were also democratically negotiated; unsolicited concern for human and non-human victims of cruelty and oppression was frequently voiced in sharing circle throughout the year.[17]

The animal companionship approach is not without its attendant drawbacks and dangers. First, it is logistically and physically impossible to provide animal companionship for all those students suffering from low self-esteem. Second, it is in essence an anthropocentric and instrumentalist approach with a rationale primarily based upon the practical and emotional benefits for people rather than animals. As such, teachers need to be aware of the "messages" students might be subliminally receiving. Third, there is the related and ever-present risk of the animals not being treated as well as they should be.

A more generally viable approach is to build "classrooms of affirmation" in which, in a conscious and sustained way, students are encouraged to identify and acknowledge the strengths and contribution of others. This, it is suggested, will have positive spin-offs not only for students' attitudes to self, each other, and other people, but also towards animals and nature. Characteristics displayed by students with an affirmative sense of self and others would include:

- the ability to assess realistically both the strengths and weaknesses of their own work,
- the ability to recognise the worth of others, and give affirming feedback to classmates,
- the ability to accept constructive criticism and suggestions in an open-minded manner,
- without becoming overly defensive,
- the ability to work co-operatively in a group, accepting the contributions of each member without needing to dominate or impose one's ideas on others, and
- the ability to react reasonably and assertively in conflict situations, without relying on physical and verbal aggression.[18]

Carolyn Zahn-Waxler *et al.* are critical of theories of child personality that depict young children as egocentric, demanding and hedonistic. Such theories, they maintain, tend to draw on material collected in interview, a situation where young children appear disadvantaged in that they cannot put into words their acts of caring, sense of justice, and understanding of moral issues. Children's early empathetic proclivities, they suggest, can be built upon and reinforced by learning programs that give active recognition to the universality of basic emotions amongst human beings and other mammalian species and, also, offer clear messages about the importance of care and compassion. Learning designed to foster empathetic and humane attitudes and behaviours would include:

- warm and accepting relationships between students and teacher,
- learning materials realistically portraying feelings and distress,
- opportunities for children to have direct experience of helping,
- explicit explanations about the feelings and circumstances of human and animal victims, and
- general codes stating positions on altruism, aggression and morality in simple explicit terms.[19]

Role modelling by significant adults, they stress, is of critical significance in fostering empathy for people and animals. "The parent (teacher) who conveys his moral values as principles only, but does not translate these into real, caring actions, accomplishes a limited kind of learning in the child. Generalized altruism appears to be best learned from parents (teachers) who both inculcate the principles and show real altruism in their everyday interactions[20] (my parentheses). Or, put another way, adults need to walk their talk.

A major problem in building classrooms of affirmation is often teachers' own lack of self-esteem. Self-esteem, it has been suggested, is linked to preparedness to take risks. Teachers with low self-esteem often lack the confidence to experiment with new forms of teaching, learning and classroom relationship; they do not readily accede to the devolution of power implicit in facilitation of participatory learning processes. Level of self-esteem, it has also been suggested, directly affects whether we view others positively or negatively. Teachers with low self-esteem often tend towards a conservative, or minimalist, view of students' willingness to learn, intrinsic motivation, capacity for self-direction and self-organization. As students (whose self-esteem has not been nurtured) revert to forms of guerrilla warfare in an effort to subvert a dehumanized learning situation, that view will seem confirmed. "Without teachers themselves being confident and having high self-esteem," writes Lawrence, "they are not easily going to be able to enhance the self-esteem of the children in their care."[21]

The humane, esteem-building teacher is accepting, genuine and empathetic. She is non-judgmental and always accepting of the student's personality (whilst not necessarily always approving of her behaviour); she is a "real person" and does not hide behind a professional "mask"; she is able to appreciate what it feels like to be the other person and looks and listens for the feelings and meanings behind what the student does and says.[22]

Classrooms of interdependence

Co-operative learning structures accord closely with the aims and philosophy of humane education. First, they are built upon a recognition of the intrinsic worth of each learner and a valuing of everybody's contribution to the learning process. Second, they involve a "winners all" approach to learning and, as such, help reinforce self-esteem, whereas individualistic and, especially, competitive learning can result in a devaluing of students who achieve less. Third, they provide fruitful contexts for the sharing of feelings, opinions and perspectives and are, thus, effective in promoting empathetic attitudes and sensitivity towards others. Co-operative learning has also been found to be more efficacious than individualistic or competitive approaches the greater the degree of conceptual learning involved. Additionally, it has been found that higher order skills development will take place in co-operative learning situations in which the task undertaken generates controversy or conflict of ideas, opinions and theories (as compared with individualistic study of controversy, or a group task based on a non-controversial issue).[23] Such conclusions would seem to be of great significance for humane education given the complexity, controversiality and value-laden nature of many of the issues falling under its umbrella.

Regular immersion in co-operative learning contexts also allows students to experience the class not as a collection of disconnected individuals, but as an interrelated system in which the actions and input of each member affect, and are affected by, the actions and input of others. Through co-operative activities, students can, from an early age, gain concrete experience of the highly complex idea of interdependence, a key concept in humane education. A lived experience of classroom interdependencies can provide the bedrock for an internalised understanding of interdependencies between humans and animals, within ecosystems, and between forms of prejudice, discrimination and oppression (such as racism, sexism and speciesism).[24]

Sixth, there is a growing body of evidence linking co-operative learning with altruistic and caring attitudes to others. David and Roger Johnson have found that co-operative learning experiences, compared with individualistic and competitive situations, promote more positive relationships between ethnic majority and ethnic minority students: the interdependence of group participants working towards a common goal tending to result in interpersonal attraction which, in turn, enhances the self-esteem of all participants.[25] The Johnson brothers also claim that differences of all kinds, whether to do with ethnicity, gender, class or handicap, are positively respected and valued in co-operative group structures if they are perceived as resources which can help the group accomplish a variety of goals.[26] Alfred Davey's research with primary school children in diverse areas of England indicates that ethnicity will significantly drop in importance as a factor in friendship choice if the children are consistently placed in "contexts of neutral and mutual dependency," i.e. in group situations where co-operation is needed to achieve a particular goal.[27] The centrality of effective communication (including listening) skills to co-operative learning situations also, it appears, has pro-social spin-offs; research suggesting that there is a direct linkage between, on the one hand, positive attitudes to self and to others, including those in distress, and on the other hand, the ability to express thoughts and feelings clearly, and to listen carefully and actively.[28] The humancentric nature of the research cited here notwithstanding, there are good reasons for surmising that the pro-social attitudes nurtured by co-operative learning will also manifest themselves in more humane and compassionate attitudes towards animals and nature.

Agitating the comfortable

The most productive learning contexts are manifested by a delicate and tensile balance between comfortability and challenge. The well-affirmed learning group is better able to creatively handle a challenge to its individual and collective values and perspectives; members will be more open, honest and forthright with regard to their opinions; there will be a greater readiness to work through conflicts of opinion. Should the level of challenge become over-intense or unsafe, the need will arise for further esteem-building and group-bonding. The role of the teacher combines a comforting of the agitated and an agitating of the comfortable.

It is, without question, the case that a lecture by a teacher can provide the requisite agitation and should be a learning strategy sparingly and judiciously employed amidst a range of other approaches. The challenge to prevailing values, perspectives and paradigms is, however, most effectively and economically achieved on a regular basis through forms of interactive and experiential learning. *Where do we draw the line?* (Appendix 2) is a representative example of a discussion activity where students, working individually or in pairs, are asked to determine their personal position on an animal-related, environmental or other issue (usually by ranking, clustering or sequencing cards or pictures) before moving into larger groups (say fours, then eights) and, finally, a class debriefing session. Even in a seemingly monocultural group, where one perspective might seem to obtain, students will experience a succession of challenges as they are asked to explain, justify and, if possible, reach consensus around their respective viewpoints in successively larger arenas. The comfortability of individual or small group work gives way to the challenge of large group work, a challenge that is more readily faced in the confidence bred of what has gone before.

Forms of experiential learning appropriate for the classroom include simulation games (mirroring or reconstructing real events or situations on a classroom scale), role plays, and so-called experiential units (which seek to provide a group-generated, hence original, experience within an artificially-constructed framework). Fertile contexts for practising communication, negotiation, decision-making, problem-solving and other skills, they also offer tremendous scope for subsequent mutual exploration of attitudes, perspectives and values. They can provide for students an emotional "slap on the face"; a sudden awareness of their assumptions and limited worldview that, sensitively debriefed and carefully nurtured, can stimulate the intellect into accommodating new insights and perspectives. *What's your smell?* (Appendix 3) and *Selling mother* (Appendix 4) are examples of such activities.

Learning processes in which interactive and experiential learning figure prominently provide students with constant multi-directional challenges to their attitudes, perspectives, values and mindsets; they thereby contribute significantly to the development of higher order skills such as problem-solving and lateral, divergent and creative thinking. Mirroring the cycles, processes, diversity and flows of the natural world and, thus, essentially ecological, they also serve as both an embodiment and celebration of the unending nature of learning. To acknowledge "that there are always multiple perspectives and multiple vantage points," observes Maxine Green, "is to recognize that no accounting, disciplinary or otherwise, can ever be finished or complete. There is always more. There is always possibility."[29] They are, it is submitted, essential features of the humane classroom in which students are called upon to radically reappraise humanity's relationship with, and treatment of, animals and nature.

Relational modes of knowing

The theory of knowing or epistemology underpinning mainstream formal education can be described as compartmentalist. The current curriculum of most classrooms carries some important subliminal messages:

- sentences, events, situations, plants, animals, etc., are to be understood by analysing them and reducing them to their separate parts;
- the ability to think logically, "apply" reason and organize what is learned sequentially is prized whilst the ability to respond intuitively and from the heart is of less consequence;
- whatever connections are discerned between different phenomena are of secondary importance;
- the learner is separate from what is studied and observed and, for that reason, complete objectivity is achievable;
- outer-directed learning (focusing on externalities) is valued more than inner-directed learning (focusing on self, self-in-the-world, personal growth and transformation);
- the ability to control really matters (whether it is control by teacher of her class, "mastery" by the student of her learning brief, or organization of knowledge into tidy categories, compartments and hierarchies); and
- certain knowing is preferable to hesitancy, provisionality and uncertainty.

Humane education, concerned with fostering dynamic compassion for all life and respect and reverence for the planet, calls for an alternative epistemology, one that accords at least equal prominence to relational and affective modes of knowing. Rosemary Radford Ruether has argued that rationalist and linear modes of knowing are "ecologically dysfunctional," that outcomes of the compartmentalist mindset have been our alienation from the actual world, our exploitation of animals, our project of devastating and seeking to dominate nature (because it is not us.)[30] She calls for "a new form of human intelligence" moving beyond "the linear, dichotomized, alienated consciousness characteristic of the "left-brain" mode seen in masculinist scientific epistemology."[31] "Our intelligence is a special, intense form of . . . radical energy, but it is not without continuity with other (life) forms; it is the self-conscious or 'thinking dimension' of the radial energy of matter. We must respond to a 'thou-ness' in all beings. This is not romanticism or an anthropomorphic animism that sees 'dryads in trees,' although there is truth in the animist view . . . We respond not just as 'I to it,' but as 'I to thou,' to the spirit, the life energy that lies in every being in its own form of existence."[32] Josephine Donovan concurs: "What is needed is a more 'disordered' (if order means hierarchical dominance) relational mode that does not rearrange the context to fit a master paradigm but sees, accepts, and respects the environment."[33] Douglas Sloan calls for a valuing of insight that "penetrates beyond the fixities and particulars of the given to an underlying wholeness that is the source of all genuine knowledge."[34]

The nurturing of relational modes of knowing, of ecological responsiveness, calls for a wide and varied range of learning approaches that foster sensitivity, allow feelings to be aired, shared and valued, that promote, to recall Sara Ruddick, an attitude of "attentive love" to all beings and entities.[35] In practical terms, this will involve the use of guided fantasy and visualization techniques, multi-sensory learning that calls upon the senses of smell, taste and touch as well as hearing and seeing, movement and dance, drama and role play, meditation and relaxation. A culture of attunement to the voice of self, others and planet, thus nurtured, is a prerequisite of an internalized, humane ethic.

Letting the outside world in, letting the inside world out

This paper has focused upon humane and environmental learning within the four walls of the classroom. Reasonably so, I would maintain, for that is where most students are required to play out their formal education. We should never forget, however, that those walls manifest what John Livingston calls "the terrible dreary sameness and homogeneity of the human physical environment"[36] and that an essential part of the humane educator's task is to breach the divide that separates the classroom from the outside world.

In the first place, students need immersion experience in the natural world if they are to be helped to understand how ecosystems work, to look upon nature with awe and reverence and to internalize that deep sense of connection that comes with what Paul Shepard calls "ecological thinking." "Ecological thinking," he writes, "requires a kind of vision across boundaries. The epidermis of the skin is ecologically like a pond surface or a forest soil, not a shell so much as a delicate interpenetration. It reveals the self enobled and extended . . . as part of the landscape and the ecosystem, because the beauty and complexity of nature are continuous with ourselves... we must affirm that the world is a being, a part of our own body."[37] It is neither practical nor necessary that immersion in the natural world take place within pristine nature, powerful and transformative though that can be. To develop a special relationship and identification with a place close by can be *the* essential step in a process of reconnection with nature. "This kind of intimate knowledge of our landscape is rapidly disappearing (and) can only impoverish our mental landscapes as well. People who do not know the ground on which they stand miss one of the elements of good thinking which is the capacity to distinguish between health and disease in natural systems and their relation to health and disease in human ones."[38] The activity, *Environmental audit* (Appendix 5), provides an additional means, beyond immersion in nature, of demonstrating to students the importance of intimately-known natural settings for human identity and well-being. Participating in schoolyard naturalization projects, involving the planting of indigenous species, can provide a vital bridge between the classroom and the natural world.

Second, students' knowledge of animal-related and environmental issues is less likely to remain at an inert level if they can acquire personal experience of those issues in the field. "Few members of a junior high school class," says Alan Bowd, "presented with literature and a lecture on the cruelty of battery hen farming will act to change battery hen farming, although they may express a negative attitude toward the practice. Consider, however, a group which visits such a facility, examines alternative egg-producing arrangements, and in this context is required to stop eating battery eggs for a week as part of a project. . . . Their knowledge is less likely to remain inert, and will be accessed and applied to relevant situations outside the classroom context (such as choosing, perhaps, not to eat egg dishes in restaurants)."[39]

Third, if a central aim of the humane classroom is to foster dynamic compassion for humans, animals and nature, it is close to inevitable that, as students become more deeply aware of the dissonances, injustices, inequities and cruelties to be found in our relationships to each other, to other living creatures and to the environment, some will begin to ask what they can do, individually and collectively, to help bring about a better world. An essential quality of the humane teacher is the ability to give life and scope to students' questings and their readiness to help effect change; to recognize and respond to what Roger Hart calls the "subtle indicators of energy and compassion" in young people.[40] Opportunities for practical involvement in projects and initiatives to effect change, with ongoing critical reflection back in the classroom, are essential if young people are to develop the confidence and competence for active and responsible citizenship. A sample of school-based action projects in the UK, as documented by humane organizations, is offered as Appendix 6. The potential hazards for both teacher and school in giving scope for socially critical and transformative action are not difficult to see.

But being a humane teacher is altogether a risky business. In *Petals of Blood* by novelist Ngugi wa Thiong'o, a teacher at a village school takes his students out of the classroom for their botany lesson. His aim is to give them a hands-on experience of flowers. He teaches them the names of the flowers and their constituent parts, and feels proud to be imparting hard, factual information. But the dynamic of the lesson changes, and his self-satisfaction falls away, as the children offer vivid poetic metaphors to describe the flowers ("petals of blood") and ask unanswerable questions about why God allows beauty to be destroyed by letting worms eat some of flowers and about humankind, law, God and nature.

> Man . . . law . . . God . . . nature: he had never thought deeply about these things, and he swore that he would never again take the children to the fields. Enclosed in the four walls he was master, aloof, dispensing knowledge to a concentration of faces looking up at him. There he could avoid being drawn in. But out in the fields, outside the walls, he felt insecure.[41]

For the humane educator, the challenge, both inside and outside the classroom, is to take risks, to celebrate life in all its insecurity and uncertainty. "Education," writes Robin Richardson, "should be helping to change the world, to make it less oppressive and stifling, less unequal, and should be helping to build, on the contrary, greater equality and justice, greater and wider access to life and unfolding. We believe these things, and we believe too that learning should be through firsthand experience, through immersion in living and confusing reality, and through passionate reflection, argument and dialogue: it cannot be, and must not be limited to places called classrooms, nor to didactic instructionby teachers, and deferential note-taking by learners."[42]

Notes on contributor

David Edward Selby is Professor of Education and Co-Director of the International Institute for Global Education at the University of Toronto, Ontario. He was previously (1982-92) Director of the Centre for Global Education at he University of York, England. He is an international authority on global, environmental, humane, and human rights education.

Professor Selby has lectured and facilitated workshops and seminars on global education around the world. He has also written extensively on global education and other educational issues, his publications include *Earthrights, Education as if the Planet Really Mattered*, with Sue Greig and Graham Pike, (World Wildlife Fund/Kogan Page, 1987), *Greenprints for Changing Schools*, with Sue Greig and Graham Pike, (World Wildlife Fund/Kogan Page, 1989), and *EarthKind. A Teacher's Handbook on Humane Education* (Trentham, 1995).

Notes and references

[1] Selby, D., "Humane education: the Ultima Thule of global education," *Green teacher*, no. 39, June-September, 1994, 9-17; "Humane education: the Ultima Thule of global education: part two," *Green teacher*, no. 40, October-November 1994, 23-31.

[2] See, for instance, the publications and classroom materials of the National Association for Humane and Environmental Education (67 Salem Road, East Haddam, CT 06423, USA); Paterson, D., & Palmer, M., *The status of animals. Ethics, education and welfare*, Humane Education Foundation/C.A.B. International, 1989; Sheehan, K., & Waidner, M., *Earthchild. Stories, activities, experiments and ideas about living lightly on Planet Earth*, Tulsa, Council Oak Books, 1991; and Walters, J.L. & Hamilton, L., *Integrating environmental education into the curriculum painlessly*, Bloomington, National Educational Service, 1992. See also, my *Earthkind. A teachers' handbook on humane education*, Trentham, 1995.

[3] James Robertson writes of the SHE (Sane, Humane, Ecological) future, arguing that many of those calling for a radical change of direction towards decentralization, ecological concern and convivial, supportive relationships regard converging world crises as essentially a crisis of masculine exploitative values. I borrow, and stretch, his idea. See Robertson, J., *The sane alternative*, James Robertson (Spring Cottage, 9 New Road, Ironbridge, Shropshire, UK) 1983, 22-3.

[4] The phrase is borrowed from Prutzman, P., Burger, M.L., Bodenhamer, G., and Stern, L., *The friendly classroom for a small planet*, New Jersey, Avery, 1978.

[5] Branden, N., *Honoring the self*, J.R. Tarcher, 1983, cited in *Marilyn Ferguson's book of pragmagic*, Pocket Books, 1990, 81.

[6] Lawrence, D., *Enhancing self-esteem in the classroom*, Paul Chapman, 1988, 2-6.

[7] *Ibid.*, ix, 6.

[8] Canfield, J., & Wells, A.C., *100 ways to enhance self-concept in the classroom*, Prentice Hall, 1976, 7.

[9] Lawrence, D., *op. cit.*, 24.

[10] Prutzman, P., *et al.*, *op. cit.*, 35.

[11] Mussen, P., & Eisenberg-Berg, N., *Roots of caring, sharing and helping*, San Francisco, Freeman, 1977.

[12] Cell, E., *Learning to learn from experience*, Albany, State University of New York Press, 1984, 24.

[13] Schubert, B., & Bird, M., *Self-image*, Reflections & Images (6607 Northridge Drive, San Jose, California, 96120, USA), 1979, ii.

[14] Haste, H., "Everybody's scared — but life goes on: coping, defense and action in the face of nuclear threat," *Journal of adolescence*, cited in Fountain, S., *Learning together. Global education 4-7*, Stanley Thornes/World Wide Fund for Nature UK/Centre for Global Education, 1990, 5.

[15] Ormerod, E., "Humane education," *Journal of the Society for Companion Animal Studies*, Spring 1990, vol. 2, no. 2, 9.

[16] I am indebted to Heather Goodson, Environmental Coordinator, West Humber Collegiate, 1675 Martin Grove Road, Etobicoke, Ontario M9V 3S3, for giving me the opportunity to tour the school and talk to staff.

[17] The work of the three teachers, Anne Marie Fitzgerald, Jackie Fitzsimmons and Steve Rathbar, will be featured in *Green School/Global School* (Umbrella Press, 1996), the published outcome of the 1993-6 Ontario Green Schools Project conducted by the International Institute for Global Education, Faculty of Education, University of Toronto.

[18] Fountain, S., *op. cit.*, 6.

[19] Zahn-Waxler, C., Hollenbeck, B., & Radke-Yarrow, M., "Teaching to be kind: learning to be caring — the origins of altruism and empathy," *Humane education newsletter*, vol. 1, no. 2, summer 1990, 9.

[20] Zahn-Waxler, C., Hollenbeck, B., & Radke-Yarrow, M., "The origins of empathy and altruism" in Fox, M.W., & Mickley, K.D., *Animal welfare science 1984*, Nijhoff, 1984, 34.

[21] Lawrence, D. *op. cit.*, 44.

[22] *Ibid.*, 22.

[23] Johnson, D.W., & Johnson, R.T., "The socialization and achievement crisis: are co-operative learning experiences the solution?" in Bickman, L., ed., *Applied social psychology annual 4*, Beverley Hills, Sage, 1983, 145-7.

[24] Fountain, S., & Selby, D., "Global education in the primary school," *Aspects of education* (Journal of the Institute of Education, University of Hull, U.K.), no. 38, 1988, 36.

[25] Johnson, D.W., Johnson, R.T., & Maruyama, G., "Interdependence and interpersonal attraction among heterogeneous and homogeneous individuals," *Review of educational research*, 52, 1983, 5-54.

[26] Johnson, D.W. & Johnson, R.T., *Learning together and alone: co-operation, competition and individualization*, Prentice-Hall, 1975, 195-6.

[27] Davey, A., *Learning to be prejudiced. Growing up in multi-ethnic Britain*, Edward Arnold, 1983.

[28] Musson, P., & Eisenberg-Berg, N., *op.cit.*

[29] Greene, M., "Education, art and mastery: toward the spheres of freedom," in *Dialects of freedom*, New York, Teachers College Press, 1988, 338-9.

[30] Ruether, R.R., *Sexism and god talk. Towards a feminist theology*, Boston, Beacon, 1983, 89-90.

[31] Cited in Donovan, J., "Animal rights and feminist theory" in Gaard, G., ed., *Ecofeminism. Women, animals and nature*, Philadelphia, Temple University Press, 1993, 181.

[32] Ruether, R.R., *op. cit.*, 87.

[33] Donovan, J., *op. cit.*, 181.

[34] Sloan, D., ed., *Towards the recovery of wholeness. Knowledge, education and human values*, New York, Teachers' College Press, 1981, 2.

[35] Cited in Donovan, J., *op. cit.*, 183.

[36] Livingston, J.A., *Rogue primate. An exploration of human domestication*, Key Porter, 1994, 33.

[37] Cited in Seed, J., *et. al.*, *Thinking like a mountain*, Heretic Books, 1988, 9.

[38] Orr, D.W., *Ecological literacy: education and the transition to a postmodern world*, Suny, 1992, 86.

[39] Bowd, A., "The educational dilemma" in Paterson, D., & Palmer, M., *op. cit.*, 56.

[40] Hart, R.A., *Children's participation. From tokenism to citizenship*, Florence, Italy, UNICEF International Child Development Centre Innocenti Essay no. 4, 1992, 17.

[41] This description of, and passage from, *Petals of blood* is taken from Richardson, R., *Daring to be a teacher*, Trentham, 1990, 4-5.

[42] Richardson, R., *op. cit.*, 5.

Appendix 1

Animals are for always

Suitable for Elementary/intermediate
Time needed Up to 4 hours for initial stages
Resources Information books, leaflets, and, if available, video material about pets
Procedure Working in groups of four, students discuss their preferred choice of class pet, using the reference material available to identify pets' needs and to determine the appropriateness of various suggestions for pets made by group members. They reflect upon class members' ability to fulfill the needs of the various pets under discussion during term, weekend and vacation time. Each group reports on its choice of pet and the reasons for the choice (the inappropriateness of other choices considered can also be explained). A group is, of course, at liberty to make the case for no class pet. A shortlist of pets is drawn up from group recommendations (the shortlist to include any "no pet" recommendations) and the shortlist put to the vote. If the vote is for a particular pet, the class discusses the caring attitudes and behaviours needed to ensure their pet would be contented and safe. A *Caring* checklist is drawn up, and signed by each student, to acknowledge that they subscribe to the guidelines it contains. The case for a pet is then put to the school authorities, to parents and to others deserving a say in the decision (i.e. a local veterinarian, the school janitors), the students explaining the process of reflection and discussion in which they have been engaged and the contents of their *Caring* checklist. Should interested parties be in agreement, the classroom is made ready to greet the pet and a petcare schedule drawn up. From time to time, students are asked to review the checklist and to ask themselves whether it needs amending and whether they are abiding by its guidelines.
Potential An activity encouraging students to think through the ramifications of responsible pet ownership. It is important that students be asked to squarely confront the question of the appropriateness of the chosen pet given that the classroom is primarily a place of work and study; also the question of having any pet at all given weekends and vacations and the fact that they will move on through the school during the expected lifetime of the pet. Will the classroom sometimes be too noisy for a pet? Are class members comfortable with the idea of keeping a pet in a cage? The rights of others to a say, in some cases an emphatic say, in any decision-making process surrounding pet acquisition by the class also need underlining. Any school board guidelines on keeping pets in schools should be brought to the students' attention as should the advice offered in humane society manuals. A decision not to proceed with a pet does not negate from the value of the process of discussion, reflection and consultation and the higher level of sensitivity to pets' needs likely to result. In determining their position on the class pet proposal, school teaching and non-teaching staff and parents should be asked to place in the decisional balance our new understandings of the way responsibility for pets can enhance individual students' sense of self-worth.

BEST COPY AVAILABLE

Appendix 2

Where do we draw the line?

Suitable for Secondary (see *Variation 1* for suggestions for elementary use)
Time needed 45 minutes
Resources A set of twelve statements and a long strip of paper for each student, each strip having a pencilled straight line along its length with a plus (+) sign at one end and a minus (-) sign at the other (see Fig. 1). A pot of paste and a set of three markers for each four students (sets should contain the same colours). An additional strip and set of statements for each group.

Using animals for scientific experiments to test whether cosmetics and toiletries (perfumes, aftershaves, lipsticks, shampoos etc.) are safe for human use.	Hunting and trapping fur animals so their skins can be used to make fur coats and hats.
Keeping wild animals in zoos, aquaria and aviaries for purposes of amusement and education.	Using animals for military experiments to test the effects of new weapons of chemical, gas and biological warfare.
Intensive rearing of animals inside factory farms for eventual slaughter and consumption as food.	Using animals in scientific experiments to find cures for human diseases such as AIDS and cancer.
Using animals as beasts of burden for riding and pulling carts, carriages and ploughs.	Using specifically-bred and purpose-trained dogs to assist disabled people.
Hunting animals for pleasure — the thrill of the chase and catch.	Using specially-bred and freshly-killed animals for dissection purposes in school biology lessons.
Rearing of animals in free-range conditions (open yards, fields) for eventual slaughter and consumption as food.	Using animals in television commercials as a means of promoting products.

Statements

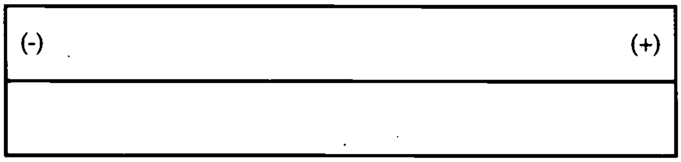


Figure 1

Procedure Random groups of four are formed. Students are first asked to work individually, their task being to read and reflect upon the twelve statements and to decide which uses of animals they can personally accept and which they cannot.

Using the strip of paper, the statement of use they can most readily accept is placed as close to the (+) sign as they feel appropriate, the statement they find it hardest to accept as close to the (-) sign as they deem fit. Other statements are placed in preferred order and with appropriate spacing between the two (see *Fig. 2* by way of example). Following the colour code provided by the teacher, one marker is used to draw a thick double line at the point where the student would personally draw the line in terms of use of animals; i.e. uses to the (+) side of the line are the ones they condone, uses to the (-) side are ones they reject. The proportion of line to the (+) side of the double line is coloured in using the second felt pen; the proportion of line to the (-) side using the third felt pen. It is entirely possible for the student to put all the statements of use to one side of the double lines. Having completed their individual task, students come together in their fours to explain and discuss their placings and where they each drew the line. After discussion, each group tries to negotiate a consensus using a new strip of paper and set of statements. If the students find this impossible, they should use the paper to prepare a presentation laying out the differences of opinion which presented a stumbling block to their completion of the task. Reporting back and plenary debriefing follows the group work.

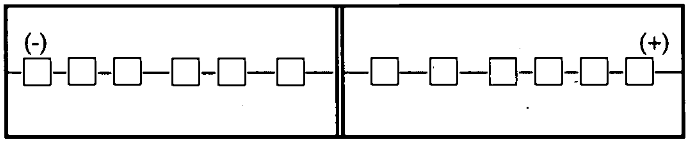


Figure 2

Potential This activity is likely to generate lively discussion and to reveal some strong differences of opinion around the use of animals. It will help students clarify their own thoughts, feelings and values whilst alerting them to a range of other opinions and perspectives. The debriefing will tend to revolve around the differing viewpoints as to where the line should be drawn and the various orderings of the statements. On what grounds did students find some uses of animals more/less acceptable than others? Where did they draw the double line and why? Was their decision made on moral, pragmatic or other grounds? Did their thinking change when they encountered the views of others? Were they able to achieve consensus? If so, on what basis? If not, why not? Might the line have been drawn differently depending on the specific circumstances surrounding each case? Does the decision depend upon the animal or type of animal in question? Might people of different age groups, cultures or countries have drawn the line elsewhere? It is also important to ask students to reflect upon whether their personal behaviours and patterns of consumption accord with the decisions they made as to where the line should be drawn and, if not, what they might do to achieve greater congruency. This challenge might best be confronted by first asking students to return to their groups for further reflection prior to a second debriefing period. *Where do we draw the line?* can provide a springboard for research into the issues raised. Following research, the activity can usefully be repeated (sufficient time being set aside for what is likely to be an animated and challenging debriefing session).

Variations 1. The activity can be attempted with elementary students using duly simplified statements; alternatively, a set of statements on the treatment of pets and domestic animals can be used. 2. *Where do we draw the line?* can be used as a vehicle for considering categories of action/protest against animal abuse.

Appendix 3

What's your smell?

Suitable for Elementary/secondary
Time needed 10 minutes
Resources Five bottles of different aromatherapy oils (i.e. rose, citron, lavender, mango, peppermint) and an open space.
Procedure Students stand silently in a circle with their eyes closed, holding out their hands. A droplet of one of the oils is placed in everyone's palm so that the five oils are distributed randomly yet equally around the circle (it helps the distribution of the oils if students grip their hands together as a signal when they have been given some oil). With eyes still closed, students then rub the oil between their hands and take in its smell. Opening their eyes, but still avoiding speaking, they try to form groups according to shared smell.
Potential This activity, sometimes called *Co-operative Sniffs*, provides a memorable co-operative learning and non-verbal communication experience. A lot of laughter — and some unease — can result from the sole reliance on the sense of smell. These reactions can be used to trigger class discussion. How did it feel having to smell each other's palms? Why the laughter? Why did some students feel uneasy? How important is smell to human beings relative to other senses? To which animals does smell matter most? Why? What would it do to the way we perceive the world, what benefits and disbenefits would there be, it smell was a human being's most highly developed sense?
Extension Having formed groups, students are taken to a large indoor room where particular areas, at some distance from each other, have been scent marked using the five oils. Each group's task is to find its own territory. This offers students an experiential introduction to the concept of animal territoriality.
Source Extension devised by Merebeth Switzer of Learning Alternatives, Portland, Ontario, Canada.

Appendix 4

Selling mother

Suitable for Secondary
Time needed 15 minutes (role play 5, debriefing 10)
Resources None
Procedure Participants form pairs ready for simultaneous role plays. Without stating the *purpose*, the facilitator explains the two roles.
Participant A acts as herself — but the exercise assumes that her mother is alive and well. ***Participant B*** has a virtually unlimited supply of valueless currency (i.e. Monopoly money). B desperately wants to buy A's mother. Participants role play the attempted purchase for one minute. The facilitator "freezes" the action and puts the "spotlight" on a single pair, who continue for half a minute longer to highlight the frustration and absurdity of the interaction. A and B then swap roles and repeat the process.

The debriefing might begin by considering how As felt. Participants will probably use words like "ridiculous," "offended," "didn"t make sense." From Bs, accounts of frustration, attempts to deceive or perhaps become aggressive may be elicited. Were any transactions completed? How close did the negotiations come to conclusion? The facilitator might then try to elicit the purpose of the activity — i.e. to suggest that "mother" might be a metaphor for land — or read either or both the Djiniyini Gondarra and Tsonakwa quotations.

> The land is my other. Like a human mother, the land gives us protection, enjoyment and provides for our needs — economic, social, religious. We have a human relationship with the land: Mother-daughter, son. When the land is taken from us or destroyed, we feel hurt because we belong to the land and we are part of it.
>
> Djiniyini Gondarra, Australian Aboriginal

> Mother any time and so if I became blind today I would see all and every part of her. The grass and trees are her hair. The rocks are her bones, the soft warm soil her flesh, the rivers her blood. The gentle rains of spring are her tears. And I listen to her in the gentle mountain breeze that bends the bough of the spruce and the cedar. I hear the song. So great is our beautiful Mother that the mountains are only wrinkles on her face. From the beginning of time she gave of herself to all of life. And when I think of these two, when I think of our Father and our Mother, then I think of how it is with human families because it's the father and mother of all things.
>
> Tsonakwa, Native American

Potential The activity could be used in a variety of curriculum areas to help students understand different relationships that cultures can have to the land and the potential for conflict over land in culture contact situations as occurred, for example, in North America and Australia and is occurring in Brazil.

Economics students might compare terms used to classify "land" in contemporary Western societies — i.e. "asset," "investment," "factor of production," "resource" — and compare these with the kinship metaphors used in many hunter-gatherer and horticulturalist societies.

Historians might reflect on how the prevailing metaphors for "land" evolved and whether negotiation without conflict was possible in specific culture conflict situations.

Language not only reflects people's perceptions but it also channels those perceptions. G. Lakoff and M. Johnson (*Metaphors We Live By*, University of Chicago Press, 1980) provide a range of examples of the way metaphors affect our everyday behaviour. Language teachers might encourage students to suggest and evaluate other influential metaphors in their lives.

To promote environmental awareness students might reflect upon what sort of metaphors for land society needs if the environment is to remain capable of sustaining life.

Appendix 5

Environmental audit

Suitable for Secondary
Time needed A block of time out of school and one or two in-class sessions.
Resources Notepads and pencils (and, possibly, a loaded cassette tape recorder for each pair of students).
Procedure Working in pairs, students go out of school to question adult members of the community about a favourite place from childhood. What kind of place was it? Why was the place meaningful to them? What do they recall especially about it? Having obtained a picture of the place and its childhood significance, the students ask about the place described as it is today. Is it the same? If not, how has it changed? Is it cleaner, quieter, less crowded? Is it still

BEST COPY AVAILABLE

recognisable? Does it have the same meaning? How does the person feel about what has happened to the place? When the class convenes, pairs report on their findings and discussion follows.

Potential This activity is a potentially powerful way of helping students understand a distinctive human experience of the modern age — the experience of loss, most notably of nature. It is this experience, perhaps more than any other, that has given rise to modern environmentalism, and it is rooted in the seemingly inescapable urbanisation of the planet. How many of the adults questioned cited natural environments as their favourite place? What does this say about our needs as human beings? How many registered a sense of loss at the alteration or destruction of that place?

Extension Students go on guided tours of favourite places that have changed in the company of the adults concerned. The class takes photographs of the places and records the adults' comments. The photographs and transcribed comments are displayed in a public place in the school.

Appendix 6

School-based action projects

- Campaigning and petitioning to stop dissection in school.
- Campaigning to replace all battery eggs used in school meals with free-range eggs.
- Compiling, publishing and selling an animal rights/vegetarian guide to the city in which the school is situated.
- Conducting frog and toad watches from February to April to protect amphibians heading en masse for their breeding ponds from death on the roads.
- Holding a Veggie Pledge week to alert school and community to the benefits (for animals and humans) of vegetarianism and to encourage people to give up meat-eating.
- Mounting a campaign against a circus appearing in the locality by means of poster displays and leafleting in school; persuading friends and family not to attend; holding group sessions for writing letters of protest to the local council, local newspapers and local radio; inviting representatives of animal welfare groups to speak in school; petitioning the local council not to allow the circus to return; asking shopkeepers not to display circus posters and explaining why.
- Mounting a weekly vigil outside the psychology school of a well-known university to protest against psychological experiments on cats.
- Organizing a poster protest against using animals to test cosmetics (and attracting local press coverage).
- Participating in local radio phone-ins on animal-related issues, either as panel members or callers.
- Undertaking work experience or voluntary work at a local kennels, animal rescue centre or veterinarian's.
- Writing letters of protest to cosmetics firms still testing their products on animals; visiting local cosmetics shops to explain the cruelty of cosmetics tests to shop managers and to ask them to adopt a "cruelty-free" policy.
- Writing to local newspapers and petitioning the Spanish Embassy about bullfighting; also urging boycotts of Spanish holidays and goods, especially those directly associated with bullfighting (i.e. certain brands of sherry).
- Writing to elected parliamentary representatives in support of the CITES 1989 ban on the ivory trade at a time when six African nations were calling for the ban to be lifted (Spring, 1992).

Sacred Land

Jim Cheney, University of Wisconsin—Waukesha

Prologue: The journey north

As I flew north along the Coast Range of British Columbia toward Whitehorse in the Yukon Territory,[1] the awesome presence of this land overwhelmed not so much my ability to describe it but rather my desire to describe it. Language in this awesome country was, for me, mainly a language of silence, long, deep pools of silence, like the lakes of this watery and mountainous land. Words, when they came, were not so much descriptions as ethically considered responses to a world that demanded mindfulness — mindful behavior, but also mindfulness in the realms of perception and language.[2] I was reminded with renewed force of veracity of Nietzsche's claim that "All experiences are moral experiences, even in the realm of sense perception."[3]

Language, when well-wrought and mindful, gracious, is at once a distillation of experience and the creation of a delicate and ceremonial world, a human world within the larger and defining dimensions of a more-than-human world. Commenting on the autobiographical narrative of Iron Teeth, a Northern Cheyenne woman, Peter Nabokov says that "her testimony seemed to exemplify how a lifetime of taking spoken words as seriously as breaking horses or scraping hides might economize the memory toward some transcendent narrative clarity."[4] The second feature of well-wrought and mindful language — the creation of a delicate and ceremonial world — is touched on in Henry Sharp's comments on Chipewyan language:

> July 24 brought an unwelcome surprise in the form of a [Royal Canadian Mounted Police] visit... We are now conditioned to accept that the symbols, ideas, and language of alien cultures are ways of knowing the environment within which they dwell, but we have conveniently managed to subordinate the significance of that understanding to our quest for objectivity. These things are not passive ways of perceiving a determined positivist reality but a mode of interaction shared between the *dene* and their environment. All animate life interacts and, to a greater or lesser degree, affects the life and behavior of all other animate forms. In their deliberate and splendid isolation, the Chipewyan interact with all life in accordance with their understanding, and the animate universe responds. White Canada does not come silently and openly into the bush in search of understanding or communion, it sojourns briefly in the full glory of its colonial power to exploit and regulate all animate being and foremost of all, the *dene*. It comes asserting a clashing causal certainty in the fundamentalist exercise of the power of its belief. It talks too loudly, its posture is wrong, its movement harsh and graceless; it does not know what to see and it hears nothing. Its presence brings a stunning confusion heard deafeningly in a growing circle of silence created by a confused and disordered animate universe.[6]

At one time I had a language, or the possibility of one, a mode of perception at any rate, a home within, or defined by, the more-than-human — a delicate and ceremonial world, which, though delicate, was more substantial and more robust than the rarified academic vocabularies I have come to inhabit. On the banks and in the waters of the St. Croix River I was graced with its presence, my words spoke it,[7] my perception was infused with it.

It should have happened that my knowledge, my language, my perception continued to grow and mature with that gracious and thoughtful river. But I was somehow pulled away from its thoughtfulness, attracted to the glittering gems, the disconnected discourses of the university. They were beautiful, to be sure, these human fabrications, intricate, alluring; but they were not ethically considered responses to a world that demanded mindfulness, they did not speak the St. Croix, they did not articulate a "knowing with"[8] that arose in mindful conversation with the more-than-human context of my life. Even this way of stating the matter supposes a greater distinction between myself and the river than I experienced at the time, and a greater "nouning" of the world, as it were.

My return to the St. Croix was a long time coming and was seemingly the result of a gathering of fortuitous accidents. In any case, the return is far from complete; language and perception have not yet returned in any full way to their earlier conversation with the more-than-human.[9] I dream of an education designed to deepen rather than sever those conversations.

I only began to realize, fully and consciously, as I flew north and was swept up in the dynamics of a fine conference that unfolded with grace, power, and delicate mindfulness, that stories — the subject, really, of my paper — are actions, practices within, and generative of, ceremonial (cultural) worlds. Current educational practice emphasizes the information content of language and story and hence an understanding of language as mirror of the world. But language is primarily action, it is generative of the worlds within which we live, breathe, and have our being, our identity.[10] In this sense, at least, matters of etiquette and comportment come to the fore — rather than issues of Truth, as this term has been understood in the West.[11] We must take care what worlds we generate.

Diamond Jenness reports a Carrier Indian of the Bulkley River as saying: "The white man writes everything down in a book so that it might not be forgotten; but our ancestors married the animals, learned their ways, and passed on the knowledge from one generation to another."[12] What does "knowledge" mean here? Carrier Indians passed down the means of creating, or recreating, the worlds, the ceremonial worlds, within which the ancestors lived — the stories, the ceremonies, the rituals. They passed down modes of action, which when written down come to be understood as information. The white man wants to know what beliefs are encoded in the utterances of First Nations people, he wants to treat these utterances as mirrors of Indian worlds. But the utterances function primarily to *produce* these worlds. The white man is concerned with ontology, correct descriptions of First Nations worlds. The Indian, on the other hand, is concerned with right relationship to those beings that populate the ceremonial world, is concerned with mindfulness and grace.

It is in light of these thoughts that I would like the following remarks to be understood, informed, as it were, by my journey north.

Introduction

An Elder telling Papago origin stories at a meeting about educational programs for First Nations peoples constructs a world in which discussion can meaningfully proceed;[13] a Hopi traditionalist begins his argument for why Hopi children shouldn't attend white schools by "speaking within the framework of the Hopi origin saga and its prophecies."[14]

In contrast, although we recent immigrants to this continent know that theories are deeply (though implicitly) shaped by personal and cultural values and that these values are deeply (though again implicitly) shaped by stories — carried and propagated by the stories that define us as individuals and define the cultures within which we live and come to understand ourselves — this understanding is not often (or often enough) reflected in our educational policy and practice; nor is it reflected in our meta-level analyses of educational policy and practice. My paper is no exception. I did not begin with an origin myth; I did not first invoke a world within which discussion might meaningfully proceed. I pointed to the practice of First Nations people who do begin in this way, but this pointing did not proceed from a set of stories that clearly defined a world. All too often the implicit assumption underlying our discussions of educational policy is that we can profitably discuss these matters without defining and locating the world (the stories) within which our discussions proceed. We speak as though *from* no world at all; and we presumptuously speak *for* all worlds.

I would like to recommend that, as environmental ethicists and educators, we recent immigrants begin to explicitly discover and acknowledge the stories within which we think about environmental ethics and education. Only then can we begin to tell (and live within) better stories, stories that lead us away from the human centeredness that defines Western culture. Only then can we begin to live "in the presence of the more-than-human . . . to awake and go to sleep with it, to take its rhythms and cycles for the rhythms and cycles of [our own lives], until the two finally merge into one stream" — as Anthony Weston has so eloquently put it in his recent book, *Back to Earth*, making use of David Abram's fine term, "more-than-human," in referring to non-human nature.[15]

In this matter of storytelling, we recent immigrants need edification — that is, moral and (dare I say it?) religious instruction. This we can find, I believe, in the cultural worlds of First Nations peoples. The stories that define First Nations cultures intertwine the sacred, the natural, and the personal (as Robert Redfield has noted[16]); they mediate the paradoxes of existence." The real world is a ceremonial world in which animals are kin, food and knowledge come as gifts from powers beyond us, and the human role in the scheme of things is ceremonial. If we were to refract our thought concerning environmental ethics through the lens of such worlds, we would come to understand that environmental ethics is really a religious concern. That is to say, environmental ethics would be understood as concerned with our relationship to a world understood as more-than-human and as enjoining a certain kind of mindfulness that can be called "walking in a sacred manner."

My point, here, is similar to that made by Annette Baier in her critique of the types of moral theories usually constructed by men in Western culture. She argued that theories of rights, for example, cannot effectively be put into practice unless they are built upon a very different kind of moral infrastructure within the culture — a moral infrastructure of defining relationships among the members of the moral community held together by an ethic of care based on warranted trust, founded, ultimately, on love.[17] We can augment Annette Baier's analysis — and move closer to the worlds of First Nations peoples — by drawing on the psychiatrist Robert Coles' work on what he calls "the call of stories." Coles argues that mental healing cannot properly begin until individuals tell their stories, give their lives narrative form. However useful the categories and concepts of the discipline of psychology might be to the psychiatrist — and, in fact, they are often disabling, both to psychiatrist and patient, according to Coles — the fundamental understanding of self which makes health possible is a narrative achievement.[18] The "ceremonials" of psychiatric practice are effective only in relation to the individual's "myth of origin". Similarly, an abstract environmental ethic must be grounded in a community-based ethic of care; and this ethic must, in turn, be grounded in the community's narrative understanding of itself. My suggestion is that we recent immigrants refract our reflection on environmental ethics through the narrative understandings of self and culture of First Nations peoples.

Sacred land

The Kiowa writer N. Scott Momaday says, "It seems to me that in a certain sense we are all made of words, that our most essential being consists in language. It is the element in which we think and dream and act, in which we live our daily lives. There is no way in which we can exist apart from the morality of a verbal dimension."[19]

We are all made of words; and we have our existence within stories, the sacred and profane stories that constitute our cultural and personal identities. For recent immigrants, most of these stories (these actions that create and sustain our worlds) touch on our biological and ecological existence only incidentally. But our existence is deeply ecological, and our cultural identities should reflect this.

Conrad Aiken adds a dimension to Momaday's thought that we are all made of words in the only two lines of his poetry that I know:

> The landscape and the language are the same.
> And we ourselves are language and are land.[20]

The landscapes that shape the identities of recent immigrants are mostly human landscapes, however, landscapes of human culture and humanly transformed nature — broken landscapes that mirror our own brokenness.

This has not always been so and is even now not so for many First Nations peoples. The deepest sources of personal and cultural identity were once (as they are even now for some) the ecological and geological landscapes that shape and sustain us. This, and our present loss, are given voice in what are surely Scott Momaday's most memorable words:

> East of my grandmother's house the sun rises out of the plain. Once in his life a man ought to concentrate his mind upon the remembered earth, I believe. He ought to give himself up to a particular landscape in his experience, to look at it from as many angles as he can, to wonder about it, to dwell upon it. He ought to imagine that he touches it with his hands at every season and listens to the sounds that are made upon it. He ought to imagine the creatures there and all the faintest motions of the wind. He ought to recollect the glare of noon and all the colors of the dawn and dusk.[21]

These unbroken landscapes are characterized by their integrity. As Barry Lopez put it: "The . . . landscape is organized according to principles or laws or tendencies beyond human control. It is understood to contain an integrity that is beyond human analysis and unimpeachable."[22]

It is this integrity, beyond human analysis and unimpeachable, that marks the land as sacred for most First Nations peoples. The "sacred" (for example, the Lakota *wakan tanka*, the great mysterious) is the more-than-human quality of the world, not a being transcendent to the world.

In this sense of "sacred," evolutionary biology and ecosystem ecology can provide recent immigrants with perhaps our deepest and most sacred myths of origin, for they portray the world as more-than-human and evoke a deep, inclusive, and sacred sense of kinship with the world around us. Nature's complexity, its generosity, and its communicative ability[23] make it possible for us to once again experience the deep unity of the personal, the sacred, and the natural.

But all this is quite abstract, and although it might satisfy the theologian that lurks in the heart of the evolutionary biologist, and although it may come to capture the imagination of the theologian,[24] this abstract argument from evolutionary biology doesn't speak to us of the particularities of our homes, our places on earth. Within many First Nations cultures, myths of origin and other stories are ceremonial creations and renewals of worlds that tie cultural identity to very specific landscapes. Barry Lopez writes:

> Among the Navajo and, as far as I know, many other native peoples, the land is thought to exhibit a sacred order. That order is the basis of ritual. The rituals themselves reveal the power in that order. Art, architecture, vocabulary, and costume,

> as well as ritual, are derived from the perceived natural order of the universe — from observations and meditations on the exterior landscape. An indigenous philosophy...may also be derived from a people's continuous attentiveness to both the obvious...and ineffable...orders of the local landscape. Each individual, further, undertakes to order his interior [psychological] landscape according to the exterior landscape. To succeed in this means to achieve a balanced state of mental health.
>
> I think of the Navajo for a specific reason. Among the various sung ceremonies of this people . . . is one called Beautyway. In the Navajo view, the elements of one's interior life — one's psychological makeup and moral bearing — are subject to a persistent principle of disarray. Beautyway is, in part, a spiritual invocation of the order of the exterior universe, that irreducible, holy complexity that manifests itself as all things changing through time . . . . The purpose of this invocation is to create in the individual who is the subject of the Beautyway ceremony that same order, to make the individual again a reflection of the myriad enduring relationships of the landscape.
>
> I believe story functions in a similar way. A story draws on relationships in the exterior landscape and projects them onto the interior landscape. The purpose of storytelling is to achieve harmony between the two landscapes, to use all the elements of story . . . in a harmonious way to reproduce the harmony of the land in the individual's interior. Inherent in story is the power to reorder a state of psychological confusion through contact with the pervasive truth of those relationships we call "land."[25]

Recent immigrants, too, have such stories, stories that define us in relationship to the land. One such tale is Aldo Leopold's "Marshland Elegy," in his *A Sand County Almanac*:

> A dawn wind stirs on the great marsh. With almost imperceptible slowness it rolls a bank of fog across the wide morass. Like the white ghost of a glacier the mists advance, riding over phalanxes of tamarack, sliding across bogmeadows heavy with dew. A single silence hangs from horizon to horizon.
>
> Out of some far recess of the sky a tinkling of little bells falls soft upon the listening land. Then again silence . . . .
>
> . . . At last a glint of sun reveals the approach of a great echelon of birds. On motionless wing they emerge from the lifting mists, sweep a final arc of sky, and settle in clangorous descending spirals to their feeding grounds. A new day has begun on the crane marsh.
>
> A sense of time lies thick and heavy on such a place. Yearly since the ice age it has awakened each spring to the clangor of cranes. The peat layers that comprise the bog are laid down in the basin of an ancient lake. The cranes stand, as it were, upon the sodden pages of their own history. These peats are the compressed remains of the mosses that clogged the pools, of the tamaracks that spread over the moss, of the cranes that bugled over the tamaracks since the retreat of the ice sheet. An endless caravan of generations has built of its own bones this bridge into the future, this habitat where the oncoming host again may live and breed and die.
>
> To what end? Out on the bog a crane, gulping some luckless frog, springs his ungainly hulk into the air and flails the morning sun with mighty wings. The tamaracks re-echo with his bugled certitude. He seems to know.
>
> Our ability to perceive quality in nature begins, as in art, with the pretty. It expands through successive stages of the beautiful to values as yet uncaptured by language. The quality of cranes lies, I think, in this higher gamut, as yet beyond the reach of words.
>
> This much, though, can be said: our appreciation of the crane grows with the slow unraveling of earthly history. His tribe, we now know, stems out of the remote Eocene. The other members of the fauna in which he originated are long since entombed within the hills. When we hear his call we hear no mere bird. He is the symbol of our untamable past, of that incredible sweep of millennia which underlies and conditions the daily affairs of birds and men.
>
> And so they live and have their being — these cranes — not in the constricted present, but in the wider reaches of evolutionary time. Their annual return is the ticking of the geologic clock. Upon the place of their return they confer a peculiar distinction. Amid the endless mediocrity of the commonplace, a crane marsh holds a paleontological patent of nobility, won in the march of eons . . . . The sadness discernible in some marshes arises, perhaps, from their once having harbored cranes. Now they stand humbled, adrift in history.[26]

This story helps define me and my neighbors in southeastern Wisconsin, in relationship to the geologic and ecosystemic legacy of the last Wisconsin Ice, as a prairie/wetland people. The elegy also haunts us — it is a story of loss. This fits our recent immigrant religious temper as a post-neolithic culture, with its religions of alienation and redemption.

It is a fair question whether our religions of loss and redemption are in some way tied to the mutual estrangement of the natural, the personal, and the sacred in post-neolithic cultures.

I think of spirituality as, in part, a particular kind of epistemological relationship to the world; that is, I think of spirituality as a particular understanding of what knowledge is and of the way in which knowledge is constituted. A wholesale despiritualization of the natural world occurred, I believe, when we in the West began to understand knowledge both as representation of the structure of the world and as a *human* construct — that is, when we lost faith in knowledge as power and practice and in the natural world as active agent in the genesis of knowledge, when we ceased viewing knowledge as a gift conferred upon us by the more-than-human world. On an older understanding, our human part in the construction of knowledge is, in its most essential aspect, to prepare ourselves spiritually (ethically) for the reception of knowledge, power.

We in the West are beginning to understand that knowledge has an ethical component. Knowledge, I have said, is contextual — it is situated within stories, world-creating stories, myths really, within which we exist and have our identity. Objectivity comes only when we invite all the participants of these worlds into the generation of knowledge. We have learned this in the study of other human cultures. We must now come to understand that this is also the case with respect to knowledge of the more-than-human world. The dominant conception of objectivity in the West has been one which, in effect, defines objective knowledge as knowledge that enables domination or control of the object of knowledge. Such knowledge is, of course, highly selective, defining objective knowledge in relation to the instrumental ends of the knowledge producer, and breeds a skewed perception and conceptual organization of the world. In contrast, research in the human sciences, at least in certain quarters, has produced a conception of objectivity that understands an objective account to be one which the researcher and person or persons researched mutually agree to and mutually construct and take responsibility for, an account which is mutually empowering, particularly with respect to the person or persons researched. The story of our human place within the more-than-human world must also be co-constructed, with the more-than-human world playing an active role — the main role, really — in the construction of knowledge. The acquisition of knowledge — and hence knowledge and objectivity themselves — has an ethical component.

First Nations peoples' understandings of the unity of the sacred, the natural, and the personal can help us appreciate these dimensions of knowledge. For many First Nations peoples, more-than-human nature is personal and kin, and humans are bound to the more-than-human in a reciprocal gift exchange economy. Knowledge is an empowering gift from the more-than-human that (in the words of Evelyn Fox Keller) "simultaneously reflects and affirms our connection to [the] world."[27]

Do we in the West have stories that have the potential to articulate the natural as the sacred, to afford us an understanding of the more-than-human as active agent in the construction of knowledge and thereby help us articulate the ethical dimension of objectivity? Yes, we do: the stories told by evolutionary biology and ecosystem ecology, as I have said, can provide us with our deepest and most sacred myths of origin, for they can portray the world around us as more-than-human and evoke a deep, inclusive, and sacred sense of kinship with the world around us. This sense of the sacred — and our kinship with everything in our world along evolutionary and ecosystemic axes — brings with it an etiquette, a sense of reciprocity, respect, and attentiveness that leads to a new epistemological relationship to the natural world, a sense of the natural world as active agent in the co-creation of knowledge, knowledge grounded in etiquette.

An etiquette of knowledge acquisition, and of knowledge itself, provides us with a way of understanding objectivity that bypasses the false dilemma of choosing between a conception of value-free science and an anything goes adherence to compelling stories. This epistemology is neither modern nor postmodern; it is, to use Robin Ridington's term, "neo-premodern."[28]

I would like to think that, should we recent immigrants once again come to experience — genuinely experience — the sacred order of the land that might define us culturally and personally, that redemption, in one of its aspects at least, would be closer to hand than it has been in the redemptive religions of the West and the Orient, precisely because the sacred would be closer to hand. Alienation would not be experienced as a cosmic sundering of God and his people, but rather as it is for the Navajo, according to Barry Lopez, a "persistent principle of disarray" checked by ceremonies of renewal that once again "make the individual . . . a reflection of the myriad enduring relationships of the landscape."

As an example of such ceremonial renewal and regeneration, I want to speak about some of the prairie restoration project my family is involved with at the Waterville Prairie, University of Wisconsin Biological Field Station.

In 1978 Fran and I returned to Wisconsin from a year on a salt marsh on Long Island Sound to two important and enduring changes in our lives: the adoption of our son, Carlos, and our involvement in the Waterville Prairie restoration project.

Twice in the Autumn — late September and late October — we gather with other friends of the field station to gather seeds from remnants of the tallgrass prairies that covered significant portions of southeastern Wisconsin before the plow. In April, we burn the prairie, something formerly accomplished by natural wildfires and fires deliberately set by First Nations peoples to prevent the encroachment of forests, thereby keeping the land open for game. Our prairie burns accomplish several things: they prevent the spread of forests onto the prairie, as I have said; they set back the growth of cool-weather European grasses and forbs, providing the native prairie species a place in the sun; they release nutrients into the soil; and they warm the soil, encouraging the warm-weather native grasses and forbs. In May, we plant new sections of prairie, setting out seedlings and raking seeds into the rich prairie soil.

The activities of these four days have become important ceremonials in our lives. The scale of this restoration project is ceremonial, it is culturally and personally regenerative. These are world-renewal ceremonies — in some measure they define and shape our community, our world — and they are healing ceremonies, in the Navajo sense — they realign us with a landscape that in some measure defines us personally. Our relationship to this place is a defining relationship. It is a powerful place of intersection for Fran's work as artist, my work as teacher and our personal, family, and community lives. It is a place that orients us, morally and spiritually, in this world. The Waterville Prairie is at the ceremonial center of my work as teacher and environmental ethicist. The prairie ceremonials are enactments of fundamental principles of moral attentiveness to all that exists.[29] The biological myths of origin of which I have spoken give broad philosophical direction and content to these acts of mindfulness.

I would like to share some reflections concerning sacred land by the poet Gary Snyder, whose chosen place on earth is on the west slope of the Sierra Nevada range in northern California. I appreciate his remarks because they strike the right tone, I think, for recent immigrants. They articulate nicely the sense of the word "sacred" as I have been using it.

> These foothill ridges are not striking in any special way, no postcard scenery, but . . . the fact that my neighbors and I and all of our children have learned so much by taking our place in these Sierra foothills — logged-over land now come back, burned-over land recovering, considered worthless for decades — begins to make this land a teacher to us. It is the place on earth we work with, struggle with, and where we stick out the summers and winters. It has shown us a little of its beauty.
>
> And sacred? One could indulge in a bit of woo-woo and say, yes, there are newly discovered sacred places in our reinhabited landscape. I know my children (like kids everywhere) have some secret spots in the woods. There is a local hill where many people walk for the view, the broad night sky, moon-viewing, and to blow a conch at dawn on Bodhi Day. There are miles of mined-over gravels where we have held ceremonies to apologize for the stripping of trees and soil and to help speed the plant-succession recovery. There are some deep groves where people got married.
>
> Even this much connection with the place is enough to inspire the local community to hold on: renewed gold mining and stepped-up logging press in on us. People volunteer to be on committees to study the mining proposals, critique the environmental impact reports, challenge the sloppy assumptions of the corporations, and stand up to certain county officials who would sell out the inhabitants and hand over the whole area to any glamorous project. It is hard, unpaid, frustrating work for people who already have to work full time to support their families. The same work goes on with forestry issues — exposing the scandalous favoritism shown the timber industry by our nearby national forest, as its managers try to pacify the public with sweet words and frivolous statistics. Any lightly populated area with "resources" is exploited like a Third World country, even within the United States. We are defending our own space, and we are trying to protect the commons. More than the logic of self-interest inspires this: a true and selfless love of the land is the source of the undaunted spirit of my neighbors.
>
> There's no rush about calling things sacred. I think we should be patient, and give the land a lot of time to tell us or the people of the future. The cry of a Flicker, the funny urgent chatter of a Grey Squirrel, the acorn whack on a barn roof — are signs enough.[30]

Here I think of images nested in Fran's baskets and necklaces:[31] Autumn sky and Big Bluestem; Summer Cooper's Hawks nested in the woods; Canada Geese flying in low; Autumn seed gathering — these, too, are signs enough.

More than one First Nations tradition relates that our human purpose in this world is to tell stories. The animal and plant people decided that they would provide what we humans need so that we may tell the stories needed to create and continually renew this sacred world. This tradition is the source of a recent Winter Solstice message Fran and I sent to friends and family:

> The stories we tell during the great sweep of holidays from Halloween through the Solstice season give courage to the sun for its northward journey, cheer the animals, and hearten the humans — who sometimes despair of having any purpose in this world and are heartened to know that the more-than-humans around the campfire (the animals, the shaggy Autumn prairie, Scuppernong Creek) like to listen to the stories we tell. We promise to tell them often and well.

Our stories of the land, the more-than-human dimension of our being, should be true sacraments — outward and visible signs of inward and spiritual grace. The notion of the sacred gives way here to the notion of sacramental practice. My concern is not with an understanding of the sacred as object of knowledge, faith, or adoration, but with sacramental practice, walking in a sacred manner.[32]

Notes on contributor

Jim Cheney teaches environmental ethics and American Indian philosophies at the University of Wisconsin—Waukesha and has published a number of articles in these areas. He is currently working on a book on environmental ethics, tentatively titled *Philosophy on the Rocks*, with Tom Birch, Ir Klaver, and Anthony Weston. He is the recipient of a Rockefeller Foundation Visiting Humanities Fellowship to workth the Native Philosophy Project at Lakehead University in Ontario during 1996-97. Jim calls the tallgrass prairies of southeastern Wisconsin and the mountains and deserts of Idaho his homes; most recently, he has fallen in love with the Yukon.

Notes and references

[1] This journey was to deliver an earlier version of this paper at the "Environment, Ethics, and Education Colloquium," Yukon College, Whitehorse, Yukon Territory, 14-16 July, 1995. I want to thank Bob Jickling (the colloquium convener), fellow participants, and those in attendance for a remarkable sojourn into the North country for what proved to be the finest conference I have ever attended. An earlier version of this paper was presented at a showing of Fran Cheney's baskets and necklaces at Plymouth Church, Milwaukee, Wisconsin.

[2] Sean Kane, author of *Wisdom of the Mythtellers*, once described conversations with the poet Robert Bringhurst, who lives in this land, as consisting largely of deep pools of silence.

[3] Louise Profeit-LeBlanc (Northern Tutchone), Native Heritage Advisor, Yukon Heritage Branch, in conversation with a student at the Yukon colloquium and with me a month later, as I was revising this paper, used a Northern Tutchone term, *tli an oh* [klee-ah-no], that she translated as "correctly true," "responsibly true" (a "responsible truth"), "true to what you believe in," "what is good for you and the community," and "rings true for everybody's well-being." Here we have a conception of truth that has an *ethical* dimension. This is what we need, I think, a conception of objectivity or truth closely tied to ethical notions of responsibility, well-being, and community, a conception that is both mindful and gracious, that insists that matters of truth are matters of comportment. This Northern Tutchone term, *tli an oh*, comes to me as a fine gift. My thanks to Louise Profeit-LeBlanc.

[4] Frederick Nietzsche, *The Gay Science*, §114.

[5] Peter Nabokov, "Present Memories, Past History," in Calvin Martin, ed., *The American Indian and the Problem of History* (Oxford: Oxford University Press, 1987), p. 147.

[6] Henry S. Sharp, *The Transformation of Bigfoot: Maleness, Power, and Belief among the Chipewyan* (Washington D.C.: Smithsonian Institution Press, 1988), pp. 144-5. Sharp imports something of his own Western animate-inanimate distinction into his discussion.

[7] "My words spoke [the St. Croix]." Irene Klaver, at the Zen Lite V Yellow Lake-Yellow Peak Conference (see note 9, below), observed that the various colors of the Indian Paintbrush are a function of the varying mineral composition of the soil. "They speak the soil," she said.

[8] "'Knowing with' is a rendering of Heraclitus' notion of *logos* (reason) as always being related to *phusis* (nature, environment/context). The relation between *logos* and *phusis* is such that the origin of my knowing is never exclusively in me, but in something other than me. This is expressed in language by the presence of the word *xunos* (together, with, common, shared) whenever *logos* is invoked." These words are those of Irene Klaver, in correspondence and in her thoughtful and perceptive paper, "The Implicit Practice of Environmental Philosophy," in Lester Embree and Don Marietta, editors, *Environmental Philosophy and Environmental Activism* (Lanhan, Maryland: Rowman and Littlefield, 1995): 67-79.

[9] Following the Yukon Colloquium I had the great good fortune to participate in the Zen Lite V Yellow Lake-Yellow Peak Conference. Experiences undergone and shared at Zen Lite V have given me hope that such a return is indeed possible. My thanks and gratitude to Cold Mountain Birch, Deer Clover, Daddy Longlegs, and, as emblems of the more-than-human world (that never gets lost in its appearings and disappearings), the mountain goats on the snow cornice high above Yellow Lake.

[10] The words "I promise . . .," like a handshake, function as a ceremonial action and can proceed effectively only within a ceremonial world, a world we create with our actions, including our verbal actions and our stories.

[11] Again, I am reminded of the Northern Tutchone term, *tli an oh*, "responsibly true." See note 3, above.

[12] Diamond Jenness, "The Carrier Indians of the Bulkley River," *Bureau of American Ethnology* Bulletin No. 133 (Washington, 1943), p. 540.

[13] Sam Gill, "The Trees Stood Deep Rooted," in Gill, *Native American Religious Action: A Performance Approach to Religion* (Columbia: University of South Carolina Press, 1987), p. 17.

[14] Nabokov, "Present Memories, Past History," pp. 148-9.

[15] Anthony Weston, *Back to Earth: Tomorrow's Environmentalism* (Philadelphia: Temple University Press, 1994) p. 143.

[16] Redfield, however, uses the terms "God, Nature, and Man," respectively. Robert Redfield, *The Primitive World and Its Transformation* (Ithaca: Cornell University Press, 1953), chapter 4.

[17] Annette C. Baier, "What Do Women Want in a Moral Theory," *Nous* 19 (1985): 53-63.

[18] Robert Coles, *The Call of Stories: Teaching and the Moral Imagination* (Boston: Houghton Mifflin Company, 1989), chapter 1.

[19] N. Scott Momaday, "The Man Made of Words," in *Indian Voices: The First Convocation of American Indian Scholars* (San Francisco: The Indian Historian Press, 1970), p. 49.

[20] Conrad Aiken, quoted in Edith Cobb, *The Ecology of Imagination in Childhood* (New York: Columbia University Press, 1977), p. 67.

[21] N. Scott Momaday, *The Way to Rainy Mountain* (New York: Ballantine Books, 1970), p. 113. I retain the first sentence of the section, usually dropped when quoted.

[22] Lopez, "Landscape and Narrative," in Lopez, *Crossing Open Ground* (New York: Random House, 1988), p. 66.

[23] "Shall I not have intelligence with the earth? Am I not partly leaves and vegetable mould myself?" Henry David Thoreau, paragraph 17 of "Solitude," in *Walden*.

[24] "I suspect that the real moral thinkers end up, wherever they may start, in botany." Annie Dillard, *Pilgrim at Tinker Creek* (New York: Bantam Books, Inc., 1974), p. 115.

[25] Lopez, "Landscape and Narrative," pp. 67-8. The stories of other cultures meditate on human relations to more-than-human nature in other ways. Haida culture, as I understand it through the work of Sean Kane, meditates

BEST COPY AVAILABLE

on the relationship of the daily affairs of humans to the larger (ecological, we would say) patterns and powers that enfold them and the differences between these enfolding patterns and our daily affairs — the ways in which these patterns can put our human activities to their own uses, the dangers invoked when we humans attempt to put these enfolding patterns to our own use. There are striking differences between agricultural, horticultural, and hunting peoples with respect to their understanding of the relationship between humans and more-than-human nature. Sean Kane, *Wisdom of the Myththellers* (Peterborough, Ontario: Broadview Press, 1994).

[26] Aldo Leopold, *A Sand County Almanac* (New York: Ballantine Books, 1970), pp. 101-3.

[27] Evelyn Fox Keller, *Reflections on Gender and Science* (New Haven: Yale University Press, 1985), p. 166.

[28] Ridington uses the term "neo-premodern" to describe the work of First Nations novelist, Tom King. Robin Ridington, "Coyote's Cannon: Sharing Stories with Thomas King," presented at the "Theorizing the Americanist Tradition" conference at the University of Western Ontario, June, 1995.

[29] On the notion of moral attentiveness to all that exists, see Thomas H. Birch, "Moral Considerability and Universal Consideration," *Environmental Ethics* 15 (1993): 313-32.

[30] Gary Snyder, *The Practice of the Wild* (San Francisco: North Point Press, 1990), pp. 95-6.

[31] See note 1, above.

[32] Tom Birch and Anthony Weston reminded me, at the Zen Lite IV Mountain Meadow Conference, of the priority of an epistemology based on etiquette over ontology.

An Unwanted Story

Martha McMahon, University of Victoria

The characters in the following story, including Sarah, the co-narrator, are fictional, but the parts they play are not. These characters could be you, me, or anyone. Perhaps they are.

Let me be clear at the outset. I did not want to write this story. I would have preferred to write a more ecofeminist story: one that expresses the voices of marginal or oppressed people (Cheney, 1994; Warren, 1994). Privilege is largely taken for granted by the characters in my story, although, at times Sarah (and I) try to make it visible. Important characters, such as the original inhabitants of the area in which the story is set are also invisible in the story: they are significantly absent. And the topic — logging — seems closer to the concerns of deep ecology than ecological feminism. (Tzeporah Berman would not agree.)

The story takes place in a setting of great natural beauty, where "protecting the environment" is often justified by appealing to the aesthetic value of the environment to local residents or tourists. Few question the privilege and history surrounding this relationship with nature. Thus my story deals with conflict among the relatively privileged rather than with issues of social justice with which ecological feminists are more comfortable.

But there I am. Or here I am, speaking from near the centre rather than the margins of power. Ecofeminists recognize the epistemic advantage of those at the margins of society. But what about challenges to authority from within? Val Plumwood (1994) argues that environmental consciousness is a disruptive consciousness. Can ecological feminism challenge authority from within the centre rather than from the margins?[1] If it can, then surely part of its role must be to be disruptive of comfortable selves, of culturally constructed characters and the easy tales that these characters tell inside and outside of school.

And although the characters in my story may be fictional, I do not believe that the story I tell about power is.

Knowledge and power: Powerful knowledge

My story about Sarah and myself is also a story about power and knowledge. It carries a message about how power works through everyday and expert knowledge. My story is a counter-morality play, exposing knowledge (a modern hero) as having a morally ambiguous character. Its message is that environmental education needs to start not simply by teaching better environmental ethics, but by exposing the hidden ethical messages that come embedded in existing knowledge.

Modern ideas about education give a heroic role to the "power of knowledge" in a moral struggle against ignorance. It is reassuring to have faith in education. It gives us hope for a better future. And it gives me a job. It therefore came as a shock to me to learn from Sarah last summer that knowledge, as well as ignorance, can be part of the cause of environmental destruction.

In the following story I explain why environmental educators need to develop a better understanding of the relationship between power and knowledge. Drawing on Foucault (1980), feminists Nancy Fraser (1989) and Joan Scott (1988) see knowledge (or what is produced as knowledge in our society,) not as a corrective to ignorance, but as *the practice of power*. Foucault likens the dissemination of power in the modern state to a "capillary," whereby power is widely dispersed and disseminated through multiple discourses and knowledge processes. These discourses, Fraser (1989, 18) explains, work by defining the micropractices of everyday behaviour so that "power touches people's lives more fundamentally through their social practices than through their beliefs." That is, our actions, including our interactions with our natural environment, are shaped by "the practices of power" in ways of which we are quite oblivious. I am not talking about abstract social forces, determining social structures, or some invisible hand. Rather I am talking about how environmentally destructive practices are produced and reproduced in everyday life because of the way power works in modern societies.

Power in modern societies operates more pervasively through knowledge than through repression and coercion. Joan Scott (1988, 2) defines knowledge broadly:

> Knowledge refers not only to ideas but to institutions and structures, everyday practices as well as specialized rituals all of which constitute social relationships. Knowledge is a way of ordering the world; . . . it is inseparable from social organization.

Thus not only is knowledge deeply implicated in power relations, but *power relations are embedded in knowledge*. For Dorothy Smith (1990), knowledge, that is to say culturally dominant knowledge, operates as a kind of ideological practice: it carries in it (and is part of) the social relationships of ruling. As a feminist sociologist, Smith (1990, 4) shows how such knowledge is an ideological practice "that subdues the lived actualities of people's experience to the discourses of ruling." The ideological practice of objectivity in particular, Smith explains (1990, 31), converts people from subjects to objects of investigation.

Even more pervasive (and more relevant for this paper) are the ideological practices of knowledge that convert nature into an object of knowledge and control. And this kind of ideological knowledge of nature has become central to the practices of political power in modern society (Merchant, 1980). The social, economic and political arrangements of modern societies, with their forms of mass production and consumption, are predicated on the domination of nature. What is less visible is how everyday social relationships, of race, class and gender, also carry in them a "ruling relationship" with nature. That is, the domination of nature is *assumed* in social relationships of modern societies and is thus reproduced through our social interactions. The domination of nature is not a by-product, but a pervasive, taken for granted, constituent of social relationships.

It is not surprising, therefore, that for feminist teachers like bell hooks (1994), the key to liberatory education is not the communication of cultural knowledge. Rather it is the practice of *teaching to transgress*:[2] that is, teaching to question the power relations in expert ways of thinking about things and in everyday ways of doing things. Environmental educators should aim at no less.

The beginning

On the edge of the piece of land on which Sarah lives there is a tree with two trunks. I have seen it. One trunk is cut. The other trunk still stands. The one trunk is cut because it is on her new neighbours' property. The other trunk stands because it is on hers.[3] The severed tree embodies contested social claims on nature in the wonderfully beautiful, out of the way place in which Sarah lives. These claims are grounded in dominant cultural discourses such as those on economics or property rights, but also in the personal stories she and her neighbours tell to make sense of their actions and their lives, and why they live in this remote and inaccessible place.

Stories, public and private, carry ethical messages, often contradictory ones. These stories frame our actions and identities in moral terms. For example, everyday talk of private property among Sarah's neighbours is a *moral* discourse. Property claims are not simply power claims: they are more often represented in terms of entitlements, earnings, or past hard work, rather than, for example, as being matters of theft or historical chance.

I had been writing a paper on environmental ethics and education in the troubled summer of Sarah's story. But that changed. I lost the thread of my academic story and became unsettled, disturbed, distracted and captured by Sarah's experiences. It seemed to me that for all my academic talk and reading on environmental and ecofeminist issues, I really was not able to respond usefully to the local world around me. And so I want to talk about environment, ethics and education *outside* the classroom, not in some hypothetical or exotic place, but in the local places where we live. Let me give an excerpt from Sarah's account written in of the summer of 1995.

From Sarah's story

I have a habit of saying that I am very lucky to live where I do. But perhaps it would be more truthful to say that I am privileged to live here, and I live here because I am privileged. I sometimes wonder if in working with my neighbours to resist the "development" of this remote area, am I being ecologically responsible, or am I protecting my privilege?

This summer, a couple escaping what they call the social and environmental toxicity of Vancouver (his words) recently purchased the 7 acres of land next to where I live. About an acre of this area was a meadow and the rest was heavily treed woodlands. Her occupation is that of a holistic healer — his occupation is in environmental restoration. They decided to cut and clear the woodlands, selling all the trees for lumber. Many of the people who live near by were angry. My new neighbours said they wanted, or rather needed, the money to build a guest cabin and a house. They spoke of their love for the environment and commitment to the idea of neighbourhood and community as they explained to me why they could not leave even some of the trees. The environmental restorer assured me that the environment would be better than before he arrived by the time he had finished his work. This he communicated to me in a language of a certain kind of ecological science — of amounts of biomass and water quality and so on. He spoke of his commitment to *growing organically on some of the land he has cleared.*

The restorer and healer located their behaviour in a plethora of ethical positions — concern for the environment, their repugnance at the destruction of the natural world around them, an awareness that things cannot go on like this. They also invoked ethical concerns for their children — indeed, they were doing what they were doing in part for their children. My new neighbours see themselves as taking a big risk in pursuing their alternative social and environmental values. They have come to live in poverty, he told me. They see their decisions and actions as moral ones and environmentally ethical ones — they would have preferred, they said, not to have had to cut all the trees, but financial circumstances dictated and they will "make up" for it.

Financial pressure is an extremely persuasive justification in the 1990s, whether invoked by individuals, corporations or governments. Economic realities are beyond question. My new neighbours placed their individual actions in a broader moral story that carries strong themes of eco-centric and community centred ethical values and a rejection of modern society. In terms of environmental ethics, they are "educated." They see others as the problem which they are attempting to escape.

Teacher's notes: On ethics and actions

If, as educators, we want to question people's everyday stories and actions from a new grounds of ecological ethics, then we must understand that the *words* and *worlds* we are questioning are already morally constituted.

I'll come back to Sarah, her neighbours and the severed tree in a moment. First, I want to talk about what I think I have learned from the experience Sarah shared with me.

From Sarah's story I have learned that much of the subject matter of environmental ethics comes packaged under other names and is talked about on other terms. Popular meanings of property, of what it is to be an adult, to be a parent, to be an individual, beliefs about the nature of society or the direction of social change (for example, stories that show that the world is falling apart, crime is out of control, or whatever) all carry implicit and powerful environmental messages. We acquire these unspoken ethical messages and values "by-the-way" — as we acquire and construct other cultural stories and rhetorics.

If this is so, then much, if not most, ethical education is implicit. Similarly, much environmental ethical decision making *happens by default.* It happens "by-the-way" to our making other decisions and to our being engaged in courses of action that appear to have little to do with our articulated environmental values.

Indeed, if we were to listen to what people say rather than looking at what they do, we would find grounds for optimism. Sociological surveys and opinion polls tell us that, in recent decades, there has been a shift in social values towards a more eco-centric ethic. It appears that everyone is now "for the environment." Isn't this good news?

Perhaps not, for our consciously held environmental values do not guide conduct in any simple or direct way (Deutscher, Pestello & Pestello, 1993). Most of our everyday behaviour is *not* framed by those values or shaped by an awareness of the potential consequences this behaviour will have for the environment. We do not usually know the full range of environmental outcomes of the actions in which we engage. And when values are invoked, we think and talk in terms of the values in the actor's intentions rather than the values that are realized in the consequences of his or her actions.[4] How can this be? Does it mean that ethics haven't much to do with anything more than making one person *feel good* and another person *look bad*?

The sociologists among us would say that, of course, behaviour is institutionally determined not individually chosen and that ethics function rhetorically, as accounts to legitimate behaviour rather than to regulate it.

The more moralistic among us might conclude that people are simply hypocritical or lack moral fibre (a favourite explanation of the nuns who educated me as a child). The more sophisticated might add that people are unrepentently anthropocentric. And economists might argue that people usually operate within an ethic of self-interest, so let's get real. "Can't change human nature, or economic realities," they'd muse — so what we need is a full cost accounting for our consumer choices and individual preferences that puts all those environmental externalities right there on the price tag. The market place can do what ethical education cannot.

All these explanations have some appeal. But they are not good enough analyses, and they provide poor guides to those of us concerned with environmental ethics and education and who wonder if education can make a "difference."

From my story

Two local events disturbed Sarah's summer of 1995 and led me to question what environment, ethics and education might mean outside the classroom. First was a local dispute over a rezoning application. Paradise Hydro (Pd. Hydro) sought to rezone for industrial use an area that is in the watershed of one of the few wetlands in the area where Sarah lives. Here, among other uses, they could store their treated poles and so forth. The local conservancy, neighbours and adjacent organic farmers opposed the rezoning at a public hearing. They feared contaminated run off. They learned to talk about copper chromium arsenic and parts per million.

The second event of that summer to shift the focus of my academic story on environment, ethics and education was the arrival of Sarah's new neighbours and their decision to log and clear the land beside where she lived. At this point, Sarah's story overwhelmed mine.

The first event of Sarah's summer drew my attention to the power of scientific discourse in local political decision making, and to how very hard it is for many ordinary people to talk publicly about environmental issues. And the second event drew my attention to the power of the discourse of property rights and its amazing power to transform the very landscape.

Sarah and many of her neighbours were disturbed by their experiences when they tried to speak out on environmental issues. Like Sarah, several of her neighbours found that, in the context of the prevailing ways of thinking about and talking about things, their own public speech was in constant danger of being reduced to a kind of babble. Whereas they spoke in terms of caution, uncertainty, lack of trust and experience, the framing of public debate in terms of privileged proof, precision and legality. And decision makers framed their job as one of separating emotion from fact.

At the same time, Sarah was surprised to discover that the dominant discourses of science and property were often privately questioned. Although these discourses carry authority, she concluded, they did not have a monopoly on truth, virtue or merit among many of her neighbours. She discovered cracks in the authority of these discourses.

From Sarah's story, it seems to me that some of the power of dominant discourses comes from the fact that, whatever their personal reservations, most people find it hard to publicly question these discourses, and find it even harder to articulate alternatives. Certainly Sarah did. It seemed as if there was no public language with which to speak differently.

From Sarah's story

As I write this story I hear the drone of the chainsaws and log-moving equipment in the background. It swirls in my window and teases me with its indifference as it rolls over me without leaving a mark. I hate the sounds. Some of the spaces between my words are filled with my trips to the woods beside my house to see what they are cutting now. I can't stop looking. I can't say what I see. When I do speak I can only ***again*** *caution the loggers not to cut beyond the legal property line. That is the line that counts, the conceptual boundary that has physical and legal consequences — so razor sharp a concept that it can cut between twin trunks of a single tree. The machines seem unstoppable. I am reminded of film footage of a war where silent, scarfed women watch the conquering army drive through their villages.*

But the machines do stop — for coffee, for lunch, and again at 5 each evening. These machines have human rhythms. At night it is quiet again and when I go to the woods the deer are back, browsing on the undergrowth as though they don't know. For a moment I even found myself thinking that the deer were irresponsible in their carefree attitude.

Where will they and I go? I realize ***my home*** *and* ***their home****, whatever their many meanings to us temporary inhabitants, cannot resist being reduced to property — to conceptual boundaries enclosing black holes that swallow all meaning but their pencil thin lines. I realize I have no home in the world either. Home is somewhere one belongs. But when accepted knowledge insists that home is somewhere that* ***belongs to me****, then where do I belong? And where do the deer belong? Unlike the deer, somewhere "belongs to me": I own property. Like the deer, I am not able to ask the cutting machine to stop. How can I ask it to, beg it to, or make it stop?*

From my story

The two events, the rezoning application and the arrival of Sarah's new neighbours, brought home to me the limits of environmental education. First, the rezoning discussions showed that many actions that have environmental significance are couched *neither* in environmental nor ethical terms when publicly discussed. At best environment is added on as a *risk factor* to be managed or costed. In Sarah's story, local people challenged "the authorities'" (political and scientific) framing of the rezoning issue. But they accomplished this largely by being unruly, noisy and disruptive rather than by exposing and questioning the power relations in dominant discourses. While unruliness allowed an energetic group to stop a *particular* development, by itself it did little to change the ways in which most development and zoning decisions are made. It may even have hardened the resolve of the "authorities" not to allow such 'irrational' debates to get out of hand in future.

Second, even when environmental values *are* articulated, as in the case of Sarah and her ecologically minded new neighbours who clear cut, these values may be so open to multiple interpretation that they can be consistent with almost any course of action. In neither of these two cases would (conventional) environmental education have helped lead to better outcomes. It was an unsettling summer for Sarah and myself.

It would be easy to dismiss Sarah's new neighbours as hypocritical and as bad folk, as having the wrong environmental ethical stance, perhaps. But this isn't much of an analysis.

First, Sarah's new neighbours have many of the "right" ethical values. That is, they have the right attitudes in their minds. They say eco-centric things. Yet, it seems to me that to think of ethics in terms of attitudes or ideas, as being psychological phenomena rather than social and political practices, is to encourage what Donna Haraway (1991) calls a "view from nowhere" — decontextualized ideas that have locally disastrous consequences. The difference, as bell hooks' (1994) points out, is critical for those who see education as a liberatory practice. Certainly the transformation of ethical consciousness is important, hooks explains. But ethical consciousness for social change *must* be talked about in terms of what it means for our everyday actions, both for we who teach and those we teach. For teachers especially, this means reflecting on how we ourselves participate in relationships of inequality and domination, of nature or other humans, through what we produce and teach as knowledge. Contextualized environmental consciousness requires constant self-reflection.

But how reflective is the framing of environmental ethics in school and outside? Often issues are framed primarily in terms of conservation and preservation, as my talk of trees might appear to be. But this framing is far too restrictive. It limits the possibility for critical self and public reflection on the complex roots of environmental problems and is thus inadequate for social change. A reflective analysis of local environmental issues where Sarah lives would go beyond trees to the gender, class and race relations that invisibly sustain our lives and homes. It would show how deeply and perversely environmental ethics and the practices of power are connected.

From Sarah's story

People where I live cannot easily raise the questions or frame the public debate in terms that would allow serious discussion on how we are to live locally and globally. But I don't regard this inability as our personal failing. We are hemmed in by our terms, our taken for granted categories, our stock of everyday and expert knowledge. For to question environmental practices challenges existing social relationships. And existing social relationships are precisely what must be questioned if we are to understand environmental destruction. "A man has a right to do what he likes on his own property," a long time resident of the island tells me. He disapproves of my new neighbour's actions but defends his right to do it. I know academics use concepts like anthropocentricism to explain environmental destruction. But what does that mean locally? What everyday meanings are embedded in the meaning of "man," "individual," "rights," and "property" that we cannot effectively challenge destructive environmental practices.

One the one hand, I don't want to talk about these events. After all, there is no real message in my story. (Other than Martha's written subtitles) there isn't a beginning or end to my story. It isn't even a good story. There is neither resolution nor character development. (I cannot say I am older but wiser.) On the other hand, I can't stop trying to talk. I have talked to my neighbours, talked to public officials, talked to local politicians, talked to my friends. I have conversations in my dreams; I wake during the night babbling to myself and some imaginary audience. And it is babbling in the biblical sense of the absence of a shared language in which to speak and be understood. I am resentful that, to be heard, I must speak a language (and in ways) that someone like I cannot speak. And what about the deer, what language must they talk?

Teacher's notes: On reclaiming words

Popular concepts of scientific facts, gendered individuals, a man and his property, (or a company and theirs) carry consequences for relationships to nature though they appear to be environmentally neutral, legal and political concepts.[5] Carmen (1994) describes this power of dominant meanings as being a form of colonization: colonization of human subjectivity and of mind. We cannot really talk about nature and the environment until we challenge these dominant meanings. Is there any way we can open up for question these key certainties of self, property and dominant knowledge that guide our individual and collective relationships with the natural world?

Reclaiming language isn't simply a word-game. It involves a process of pointing out the invisible implications of taken for granted meanings. Outside the classroom, speech is heard for its multiple and local significance. Challenging taken for granted meanings can hurt some, make others angry, offer political resources to yet others.[6]

The challenge of subversive agency in education, Carmen (1994) concludes, is to release people from the shadows of invisibility and a culture of political silences which prevents them from taking part in the positive transformations of their societies. For Donna Haraway (1991), this "making visible" makes us all responsible for what we see or know: vision and knowledge are no longer accepted as passive. In the process, people reconstruct themselves as citizens in new ways, *as authors of knowledge.* The individual is no longer "the consumer" or abstract bearer of property-like rights vis-a-vis nature or others but comes to recognize his or her *own voice* in the stories she or he tells about the world. This kind of knowledge means taking responsibility for the multiple consequences of speech and action rather than claiming authority.

Sarah's comments on my story

*In questioning dominant meanings, such as the meanings of property, I think it is too easy for someone like you who makes her living in academia to be critical of the notion of property rights, and to see them **only** as a conservative discourse. You academics, after all make **your** living from a kind of cultural property, from a kind of monopoly on legitimate knowledge. To many of the working people where I live, property rights represent what they see as one of their few protections from domination — from what **they** feel to be the dominating practices of a bureaucratic state (in which educated people like you fit well) and a very harsh economic world. They see property as **their** protection, perhaps in the way you have always seen your education as your protection. Surely I need not remind **you** of how important the struggle to regain some kind of ownership relationship to land is for indigenous people or peasants! So I think you must be careful that your analysis does not confuse the very different meanings of property. There is no easy or neat way from outside my neighbourhood to say what issues should be taken up and how this should be done.*[7] *Local discussions of environmental ethics need to be grounded in the realities of the people whose lives are involved. People talk a lot about public education as a way of addressing environmental problems. I don't have this faith in public education. Perhaps you "educators" can help by making the social relationships that uphold our realities visible, because they are often invisible. (You educators don't have a good track record here.) It is this kind of "education" that will allow myself and my neighbours to see the ways in which our local issues are connected to the theoretical and global issues educators so like to talk about.*

My story

If, taking Sarah's advice, I see my teaching in the class room as teaching to transgress (hooks, 1994), to transgress the conceptual practices of power (Smith, 1990), and to critically reflect on those cultural stories we tell about self, nature and society which give our actions meaning, how does that connect to social change outside the class room? Rather than starting by building new ethical theories, perhaps, as an educator, my first responsibility is to show how domination in social and natural worlds works through (existing) theory and practice.

The models of liberatory education in which this kind of approach fits has been focused around marginal groups and the empowerment of oppressed persons. Their refusal to take on the identity of victim has been central to marginal groups' education for liberation. What of liberatory education at the centre? Perhaps, for educators, coming to see one's *own* investment in relationships of domination and coming to realize that one can withdraw tacit consent is the key to liberatory education at the centre: liberatory for teacher and student.

If those who are marginal demand the right to invent their future, then the privileged too must face their responsibility in how it is shaped. I don't yet know what this means for me in practice. I do know that the questioning of such culturally central concepts as self, the individual, or property rights cannot simply be an abstract one, or one done, as Sarah reminded me, from a position of academic privilege.[8]

Concluding teacher's notes

Environmental education must not be treated as an "add on" to existing educational practices. Rather, it must be inserted into existing disciplines, whether they be economics, sociology, English literature or physics, in ways that throw into relief the basic assumptions the discipline makes about nature, and the relationship between society and nature, and thus the very way it conceptualizes its own problematic. The division of disciplines in schools and universities, and the separation of the stories we tell in school and the stories we tell outside school makes it difficult to have those reflective public discussions that would be part of a transformative, ethical, environmental education. For now, I think that education, or much that passes for education, is still more part of the problem than part of the solution.

Notes

[1] Challenges to power from within the centre conjures up images of a coup d'etat or circulation of elites. Feminists seek to expose and dismantle oppressive power relationships rather than take over power, even in the name of a "good cause."

[2] hooks clearly acknowledges her debt to Paulo Freire.

[3] Post script: Because the clear cutting on the edge of the woods left them suddenly exposed, this tree and four others near it were blown down in the strong winds of winter 95.

[4] For example, we live in a racist society yet only a minority would acknowledge acting in a racist way or holding racist or white supremacist views. We live in a society characterized by rhetorical commitments to equality and democracy, yet inequality is increasing, and many feel democracy to be decreasing. We live in a society where the majority of people say they value "the environment," yet there is ongoing environmental destruction.

[5] According to Carmen (1994, 65), it is the apparent political neutrality of these terms which fosters the illusion of objectivity by which ethical judgement is frustrated.

[6] Challenging dominant meanings of ownership is a political as well as symbolic process. On Tuesday July 11, 1995, Mohawks walked to remember the 1990 Oka crisis. In a radio interview, the mayor of Oka described the Mohawks as nomads who had no *real* claim to the land. "We have Legal Title to the land (he said) and I cannot understand why they say they were robbed." According to the *Globe and Mail* (Wednesday July 12, 1995), non-native residents arranged a mock funeral to protest what they say the crisis cost them — in real estate values, peace of mind, and safety.

[7] Sarah's comments remind me of Lorelei Hanson's (1995) study of the Wise Use Anti- Environmental Movement in Western Canada and the US. Lorelei Hanson argues that the movement's success was partly due to environmentalists' unreflective framing of opposition to current land use and existing property rights. This framing so violated the everyday lived experiences of those who worked on the land and in resource extraction industries that they were easily mobilized by powerful corporate anti-environmental interests.

[8] Salleh (1994, 38) describes the strategic tightrope those who challenge dominant conceptual practices often walk. On the issue of individual rights, for example, ecofeminism zigzags a course between a) establishing the liberal rights of women as individuals to speak while b) at the same time deconstructing the validation of those rights and c) demonstrating how people can live differently with nature and each other.

Notes on contributor

Martha McMahon received her undergraduate degree in sociology and economics from University College, Dublin, Ireland, and her doctorate from McMaster University, Ontario, Canada. She is an assistant professor in the department of sociology at the University of Victoria where she teaches in the areas of gender, women and the environment, and qualitative methods. She is the author of *Engendering Motherhood*, published by Guilford Press (1995).

References

Carmen, Raff. 1994. The logic of economics vs. the dynamics of culture: daring to (re)invent the common future. In Wendy Harcourt (Ed.) *Feminist perspective on sustainable development*, 60-74. London and New Jersey: Zed Press.

Cheney, Jim 1994. Ecofeminism and the reconstruction of environmental ethics. In K. Warren (ed.) *Ecological feminism*, 158-178. New York: Routledge.

Deutcher, I., Pestello, F., & Pestello, F. 1993. *Sentiments and acts*. New York: Aldine de Gruyter.

Frazer, Nancy. 1989. *Unruly practices: power, discourse and gender in contemporary social theory*. Minnesota: Minnesota University Press.

Foucault, Michel. 1980. In Colin Gordon (Ed.), *Knowledge/power: selected interviews and other writings 1972-1977*. Bury St Edmonds: St Edmundsbury Press.

Hanson, Lorelei. 1995. Turning rivals into allies. *Alternatives* 21(3):26-31.

Haraway, Donna. 1991. Situated knowledges: The science question in feminism and the privilege of partial perspectives. In D. Haraway, *Simians, cyborgs and women*.. New York: Routledge.

hooks, bell. 1994. Teaching to transgress. New York: Routledge.

Merchant, Carolyn. 1980. *The death of nature: Women, ecology and the scientificrevolution*. San Francisco: Harper & Row

Plumwood, Val. 1994. The ecopolitics debate and the politics of nature. In K. Warren (Ed.), *Ecological feminism*, 64-87. New York: Routledge.

Salleh, Ariel. 1995. Nature, woman, labor, capital: Living with the deepest contradiction. *Capitalism Nature Socialism* 6 (1):21-39.

Scott, Joan. 1988. *Gender and the politics of history*. New York: Columbia University Press.

Smith, Dorothy. 1990. *The conceptual practices of power: A feminist sociology of knowledge*. Toronto: University of Toronto Press.

Warren, Karen. 1994. Toward an ecofeminist peace politics. In K. Warren (Ed.), *Ecological Feminism*, 179-199. New York: Routledge.

Environmental Education, Liberatory Education and Place-Sensitive Narrative

Val Plumwood, University of Sydney

Environmental education and ecological denial

Reports from all over the world confirm the growing degradation of global ecosystems caused by human impact on the biosphere, intensifying dramatically over the last fifty years since the institution of the postwar economic regimes of growth and development. Both greenhouse effects and accelerating ozone loss are now confirmed, and it is estimated that human activity consumes as much as 40% of the net photosynthetic product of the earth, a pattern which has been doubling every 25 to 30 years. In the 1990s we produce as much in two weeks as was produced in an entire year in 1900 (George, 1993). As David Orr puts it: "The truth is that many things on which our future health and prosperity depend are in dire jeopardy: climate stability, the resilience and productivity of natural systems, the beauty of the natural world, and biological diversity" (1994, 7). The often invoked term "sustainability" tends to obscure the seriousness of the situation; clearly no culture which sets in motion massive processes of biospheric degradation which it has normalised, and which it cannot respond to or correct can hope to survive for very long. The crisis of the coming century will challenge all our social capacities for ethical and political organisation, for rationality, imagination, and social correctiveness.

It is a matter of common observation that the necessary social change which might begin to reduce this impact and begin the construction of a sustainable society has not been occurring. These problems are not being addressed because of the growing entrenchment, in the present deeply conservative age, of institutions whose first priority is to save the worldviews and social structures which generate ecological destruction and to represent them as unchangeable. These worldviews block the only obvious and satisfactory routes to meeting ecological crises in ways consistent with maintaining a humane social order, and tend instead to direct efforts into two alternative disfunctional reactions. They focus effort, first, into hopes for technological solutions which leave damaging social institutions unchallenged and which often have further damaging side effects; and second, they divert energy into the strategy of ecological denial. "Ecological denial" is the response to the crisis in which the bulk of the social effort and energy is put not into dealing with the problem but rather into denying that it exists. Contemporary ecological denial adds to the evidence that the ecological crisis is not just, or even primarily, a crisis of numbers and technology, but rather a crisis of rationality and morality. Ecological denial is a highly disfunctional response to the crisis which can only deepen it.

There is plainly a need for a major reassessment of our culture and where it is headed. Prospects for real change are, notoriously, defeated by the short time frame and relative inflexibility of political and economic institutions and decision-making which are unable to bring key framework social structures into question. "Environmental education" seems to offer the best longer term framework in which to problematise our present course and undertake the major institutional reassessment and preparation for change that is required. Environmental education could play a leading role in this reassessment and in generating constructive responses which look forward to a better time. Before it can play this role, it must deal with the contemporary limitations on its effectiveness created by the dominant dualistic models of knowledge and by the associated science/humanities split. Existing practices of formal environmental education are often disappointingly narrow in focus, especially at the tertiary level, and usually fail to bring scientific knowledge into balance with critical social thought or to provide a good environment for action for social change.

In the second section, I show why effective environmental education must break out of the dominant objectivist models of knowledge in which it is presently contained. I shall suggest that the creation of effective and critical forms of environmental education require a challenge to the dualistic organisation of knowledge within the empires of our intellectual establishments, and especially to the objectivist paradigm. In the third section, I argue that environmental education can find more useful parallels in the methods and aims of liberatory education than those of objectivist scientific education. Critical environmental education parallels the other forms of liberatory education which emerged from the activist movements of the '60s and '70s — women's studies and anticolonial studies — in requiring alternative knowledge paradigms which can integrate personal, experiential, political and theoretical understandings. I suggest that we can pursue this parallel further with other forms of liberatory education and think of critical environmental education as challenging anthropocentrism in terms which parallel the way critical race and gender education challenges eurocentrism and androcentrism. In the fourth and fifth section I show how place-sensitive narrative and other educational strategies can challenge anthrocentric perceptions and forms of identity.

Dualism in the formal knowledge paradigm

I shall focus my remarks on environmental education in the institutional context mainly on Australia, the case with which I am most familiar. In Australia, a lot of resources are going into environmental education, but the result, I think, is on the whole disappointing. Disciplinary division and the dualisation of knowledge constructs environmental education as a second class form of knowledge, and rarely allows it the opportunity to address fully the key social elements in the creation of environmental problems. Since the dominant paradigm of scientific neutrality and value-freedom renders philosophical and social critique unwelcome or illegitimate (Harding, 1991), the placement of environmental education predominantly within this dominant paradigm serves to mute the important corrective challenge critical environmental thought poses to present forms of social organisation and to the dominant version of our relationship with nature. These structures disempower environmental education and prevent it from addressing the main problems we have to face.

Australian environmental education has been situated squarely within the dominant paradigm of scientific education, the favoured disciplinary location being geography. Sometimes several scientific disciplines are gathered together to create a larger "resource management" or "environmental studies" program, which may take up several existing areas like forestry and agriculture; sometimes there is an attempt to expand the menu by the provision of some minor non-science, most commonly, a "spiritual" ingredient as a garnish for the basic scientific fare. But these modifications usually represent the limit of integrative adventurousness. Few programs have attempted to carry integration further to give serious or equal weight to critical forms of knowledge situated in the humanities. Those which have attempted such integration have often been seen as illegitimate and lost support (for example the Human Sciences Program at ANU) or have had to accept relocation within one or other of the knowledge polarities to survive.

This dualistic treatment of environmental education in the institutions tends to divorce mainstream environmental education from critical social thought, from environmental philosophy, and from activism. Not only environmental education itself, but all these latter areas suffer as a consequence. First, both environmental philosophy, and critical environmental thought informed by the humanities and by philosophy, suffer because, as areas beyond the classical canon, they are regarded as marginal and secondary within their parent philosophy and the humanities disciplines themselves, but rarely find an alternative home within the special units set up to "handle" the environmental problem. These special units, like science culture generally, also tend to marginalise critical environmental thought because they retain a version of the positivist approach to knowledge in which the alternative to "hard" scientific education is seen as "soft" spirituality. Positivism insists that questions of value, and indeed anything other than science, are "soft," areas where no claims to expertise can be made and one opinion is as good as another. Unless they fall under the "hard" category of economics, so this thinking runs, the areas omitted from scientific environmental studies are mushy, and thus do not require real attention, or qualifications and training in critical humanities disciplines; they are appropriately handled, if handled at all, by any engineer or zoologist with a passing interest in "deep" environmental spirituality. One effect of the uncritical acceptance of the positivist "hard/soft" dualism, and the associated religion/science false dichotomy, has been to set many environmental education facilities up as tiny countercultural enclaves within the academy, at their best places of good fellowship and good intentions, but often lacking the basis for, and even hostile to, careful philosophical and social critique. The critical forms of environmental education tend to be left out in the cold, marginalised from both sides, as it were.

The second casualty of this way of organising knowledge is the prospect of ecologically-motivated social change. The placement of environmental education within science studies creates an objectivist climate which is chilly for activism and social change work in the environmental area. Activist staff and students often find that commitment to critical thought which challenges the status quo is regarded as suspect, as compromising their objectivity and scholarship. Objectivism is a key element in making the education system hostile to the kind of social change commitments needed to meet the environmental crisis. Recent feminist, philosophical and other critiques of The Enlightenment have cast much light on the dubious origins of the modern scientific concept of objectivity as disengagement assumed in the objectivist paradigm. The concept of scientific disengagement proves to be a powerful constituting and normative mythology for science, and perhaps the one which most strongly marks science out as a masculinist activity. There is now a great deal of work which shows that the ideology accords poorly with actual scientific practice and scientific discovery (Kuhn, 1962; Feyerabend, 1975; Latour and Woolgar, 1979; Merchant, 1981, 1989; Johnson, 1987; Haraway, 1989). But the ideology of objectivity has its uses, as we shall see, one of them being the facilitation of control by privileged social groups, and the ideology shows no sign of weakening. The concept of scientific objectivity which demands from the researcher a perspective free of social engagement demands the exclusion of considerations which have to be left out or put aside as corrupting in order to achieve a properly objective judgement. Objectivity is usually seen as excluding the emotional, the bodily, the particular, the personal, and of course especially the "political."

We can begin an historical account of objectivism with Descartes' concept of objectivity, since the distinction is of modern construction, although built on top of classical foundations. The Cartesian knower as "thinking substance" is treated as without body, unlocated, his knowledge not limited by a bodily perspective; the body is backgrounded and denied in the Cartesian account of achievement and identity. As with the early Plato, identity is divorced from the body, interpreted, as in the *Phaedo*, as a hindrance to knowledge. As Susan Bordo shows, the ideal of knowledge as freedom from doubt and as objectivity is also interpreted as freedom from the body and its deceptions, weaknesses and hindrances, its personal and emotional ties (Bordo, 1987, 89; Flax, 1985, 27). In Cartesianism, as in earlier rationalism, the excluded and inferiorised contrast of "pure" thought is feminine but also includes much more than the feminine. Its contrasts now include not only animality and the body itself, but also material reality, practical activity, change, the emotions, sympathy, and subjectivity. These features are drawn together in the new concept of objectivity: interpreted oppositionally as pure thought, objectivity involves setting aside "all distractions and passions which obscure thinking" (Bordo, 1987, 27). As Evelyn Fox Keller points out, the insistence on such a concept of impartiality imposes a rigid barrier between subject and object which renders suspect recognition of relationships of sympathy and continuity with what is known (Fox Keller, 1985). It involves not just separation but hyperseparation between knower and known which construes sharing and connection as hindrances to knowledge, the object known as alien to the knower, and the knowledge relation as power.

Impartiality, neutrality and disengagement by definition exclude relationships of care, sympathy and engagement with the fate of what is known, constructing connection is seen as a source of failure and error, and the object known is seen as alien to the knower. They imply the closure of the knower to the other, for the knower is construed as one who can change the other to make it conform to desire but who cannot be themselves changed by this other (Benjamin, 1988). The other can be known completely, and in the absence of consent — knowledge can be wrung from it, as a form of power over it. The withholding of recognition and respect (which are forms of engagement), and the adoption of basic non-ethical stance towards the world, leaves the field for mechanism and instrumentalism towards the object of study. The ruling out of care and respect as foundations for the knowledge relationship dictates an instrumentalising politics in which what is known becomes a means to the knower's ends, whether through direct manipulation or through simply figuring in the knower's schemes as a "case," an experimental or observational means to intellectual or academic gratification or advancement. The mechan-istic stance is expressed in the treatment of nature as lifeless, homogeneous and passive and in the negation of nature as agent. *Thus objectivist forms of science not only cannot challenge, but are actually major supports for, the anthrocentric worldview that environmental education must aim to disrupt.*[1]

In the absence of care and respect for what is studied and of responsibility to those who will be affected by it, it is inevitable that the knowledge relation is constructed as one in which the known is merely a means to the knower's ends or to the ends of power which they, in the absence of respect and care, will come to serve. The presence of an instrumentalising politics is particularly clear when those known are threatened, and especially when they are threatened as a direct result of what has been learnt about them. The politics of the disengaged anthropologist who does not care whether the indigenous people studied are harmed by his work illustrates this clearly, as does the politics of the natural scientist whose work opens the way for destructive exploitation of the items studied. Power is what rushes into the vacuum of disengagement; the fully "impartial" knower can easily be one whose skills are for sale to the highest bidder, who will bend their administrative, research and pedagogical energies to wherever the power, prestige and funding is. Disengagement then carries a politics, although it is a paradoxical politics in which an of neutrality is used to conceal a commitment to power.

Although the ideology of objectivism continues to dominate in our institutions, especially in science, more recent and sophisticated understandings of a more mature science and of epistemology give us many good reasons now to reject all these stories about disengagement. For example the subjective/objective distinction has proved to be not nearly as hard as empiricism and scientism assume. Studies of science have shown that "objective" science involves interpretation, myth, image and metaphor, in ways not dispensable or detachable and that it is difficult to draw as sharp a boundary as often supposed between "hard" Western science and the explanatory systems of other times and cultures (Marglin and Marglin, 1990). Philosophers of science have pointed out that apparently "hard," objective observation does not play the determining role in scientific theory the mythology gives it (Feyerabend, 1975; Kuhn, 1962). Observable data is rarely privileged over theory in the way this mythology suggests; observation is often (some would say always) theory-dependent, and a great deal of what passes as science involves a "bootstrap" methodology in which "Nature" is required to play a dual role as both "external" confirmer and "internal" construct of scientific theories (Latour, 1987). At the same time, there are good reasons to reject the account of "soft" areas like value as "subjective" in the sense of being arbitrary and not open to reason or to better and worse judgement.[2] The "soft" areas are much harder and the "hard" areas much softer than the original dualism and the standard accounts suggest.

The objective knower must not only deny all relationship to, and care for, what they know, but also deny any elements which would "locate" them, or their perspective, and present themselves and their knowledge as absolute and transcending location. The limits and social shaping of knowledge imposed by the knower's identity and their cultural or personal "slant" or "set" are disappeared in the presentation of such a knowledge as emerging from a universal perspective, or as transcending perspective, as "the view-from-nowhere" (Haraway, 1991). One does not have to be an extreme epistemological relativist to reject these sorts of accounts of knowledge which disappear the knower. All viable and current epistemological theories have had to concede that the knower is active not only in seeking and selecting observational input but in constructing knowledge, that knowledge is a social activity, not the passive and "neutral" reception of raw, "pure" observational data by presocial individuals. The impossibility of unlocated and disengaged knowledge means that the demand for objectivity as disengagement in practice translates as the demand that there be no *visible* engagement.

The term "false universalism" is widely used to describe claims which are presented as appearing from a universal perspective, but which in fact conceal assumptions about the world which proceed from a certain identity or position in it. Feminism and some forms of postmodernism have mounted a strong critique of "false universalism" and shown that it works to exclude marginalised perspectives by establishing concealed, normative identities which are Western, white, elite, and male. The demand for the presentation of work in terms of a neutral, impartial, universal perspective which does not own to any particular engagements or responsibility to any knowledge community (Addelson, 1993) operates in the same way as false universalism, that is, it operates selectively to exclude marginalised but not privileged perspectives. As Iris Marion Young points out in the case of the universalised citizen (1989, 257):

> In a society where some groups are privileged while others are oppressed, insisting that as . . . citizens persons should leave behind their particular affiliations and experiences to adopt a general point of view serves only to reinforce that privilege; for the perspectives and interests of the privileged will tend to dominate this unified public, marginalising and silencing those of other groups.

The call for neutrality tends to exclude affiliation to marginalised but not to privileged groups or to power. It does this especially by marking marginalised perspectives but not privileged perspectives as "political" or "biased." Just as the appearance of neutrality usually hides the treatment of the male perspective as the unmarked norm, in terms of which any explicitly female one is marked as disruptive or out of order, so the perspectives of power are usually left unmarked. They can appear as "history," "expertise," or perhaps "reality," and represent the invisible, unspoken norm in terms of which others can be marked as "political" departures. (This marking is often enshrined in disciplinary terminology, for example, in the contrast between the discipline of "political economy" and the unqualified "economics"). Work by those who challenge the status quo, but not by those with official, conservative, privileged or instrumental approaches to it, can be presented by this marking strategy as inordinately "political" or "biased," even though all these positions involve political commitments of various kinds. Objectivity can thus be represented as the property of those who support the status quo, and the lack of it as a quality of those who oppose it.

ERIC Full Text Provided by ERIC

Objectivism sets up a climate of political quietism which affects the entire academy and the whole conception of scholarship, such that any work which is explicitly engaged and open about its politics or activist commitment is likely to be considered doubtfully "scholarly." Situating environmental education within the regime of normal science allows the dominant objectivist paradigm of scientific neutrality and value-freedom to dominate and render illegitimate both philosophical and social critique and any but the mildest forms of activism. This outcome is no doubt a major reason for the preference for this regime of organisation by conservative forces within the university. While science studies remain strongly under the influence of objectivism, science cannot be a good place to locate an environmental education discipline which must have as its primary goal that of teaching people to care for their environment and understand their embeddedness within it.

It is increasingly apparent on other grounds that the science domination of environmental education leaves out the key area of critical analysis and prevents it addressing the real problems. Over the last three decades since the rise of environment movements in many countries, a great deal of information has been gathered about the increasingly degraded state of the global environment, about the rate of deterioration, and about its main causes. At the same time, much information has been generated about the alternative technologies we can adopt to avoid these impacts. Although doubtless there are many important additions still to be made to this knowledge,[3] I think we have now a general idea of the types of technological and economic alternatives we would need to put into place to avoid further destruction of the global ecosphere upon which all our lives depend. The objectivist form of environmental education I have been discussing can transmit and even expand this kind of knowledge, but it will not help us explore the social forms that best foster our ecological survival. Nor does it help us understand why our societies are doing so poorly in implementing the changes ecological rationality indicates. Not only does the dominant form of environmental education allow objectivism to create a knowledge climate hostile to social change work, it rarely addresses even the major academic questions surrounding the creation of the ethical and social conditions for a sustainable culture.

One crucial area present forms of environmental education do not address (except in the barest economistic terms) is the concept of ecological rationality itself, and the origins of its opposite, ecological irrationality and ecological denial. Ecological denial is historically variable and multicausal in its manifestation as the contemporary environmental backlash movement. But it is also a background epistemological condition to modernity, expressing of a certain kind of insensitivity to ecological relationships and priorities which indicates a profound, historically traceable cultural distortion of knowledge and reason (Plumwood, 1993). If one of the failures it signals is a failure of rationality and associated failure of social and political institutions to develop an adequate response, an urgent need of the times must be for good philosophical and social analysis and education which can show the reasons for the blindness to our present peril and trace its historical and cultural roots in our societies. The overwhelming emphasis on accumulating more knowledge of the scientific facts or of technological alternatives will not show us how to turn environmental degradation around or how to encourage people to care, at both the local and global level. For that, we need a critical focus on the social and cultural aspects of the problem, together with forms of knowledge which foster care, engagement, and responsibility as knowledge makers to communities of knowers and known.

Alternatives to the dualistic knowledge paradigm: The personal and the local

There is much more involved in challenging the dualistic knowledge forms which now disempower environmental education than just adding more philosophy and social theory to the existing mix. Humanities and social studies have their own forms of objectivism, in which prestige inheres in being "hard" in relation to someone else's "softer" area, and these forms also work to marginalise social change commitments. The rationalist institutional paradigm and context in both science and humanities oppose the abstract knowledge of rationalist education to the emotional, the narrative, the particular/personal, the local and the experiential, so that the normal institutional model of knowledge is both depersonalised and "deplaced" (Orr, 1992). These features make it especially unfriendly to indigenous forms of knowledge and learning, and inhibit the development of alternative ways of relating to nature. To counter these narrowing forms of reason/nature dualism, environmental education must transform its objectivist and rationalist elements to adopt features we usually associate with cultural critique, literary studies, and liberatory education.

As we have seen, the objectivist paradigm is unable to mount a challenge to and even supports anthrocentrism. The account of anthrocentrism I discuss below suggests a counter-hegemonic teaching model which has much less in common with scientific education than it has with cultural critique and with "teaching to transgress" (hooks, 1995), teaching which aims to disrupt a colonising worldview and to create and affirm a different set of relationships, experiences and forms of knowledge. If what is involved in countering hegemonic centrism is the reconstruction of a set of colonisation relationships based around identity formation and the suppression of certain kinds of experience, it is reasonable to suppose that there will be useful parallels with other liberatory educational practices, that, just as the structure of anthrocentrism parallels that of androcentrism and eurocentrism, so may some of the methods of undoing it.

Many liberatory educationists have emphasised the importance of the sphere of personal experience in alternative liberatory contexts which aim to disrupt oppressions of class, race and gender (Freire, 1972; hooks, 1995). They have shown that the articulation of personal experience is a crucial learning resource for the oppressed who are routinely insulted, ignored or downgraded in dominant styles of education which aim to create universal forms of knowledge and interchangeability or uniformity of educational product. These dualistic and universalising models are the educational expression of dualistic models of oppositional reason as abstraction in opposition to particularity, of reason as disembodied and impartial in opposition to the concrete and the bodily, and of particular deviations from the "universal" model as illegitimate. These models also support insensitivity to ecological relationships and relationships to place.

Most of us inquire, ponder and learn effortlessly when oriented to and motivated by personal experience, fired by a unquenchable curiosity about why the things life sends our way work out as they do. This experiential foundation for learning "from life" is abundant, equally available to us all, and normally requires little or no coercion to motivate us to inquire into and draw on it. We all want to understand our own story, why the love light or the heavy hand fell on us, and not some other. In all these respects the informal "school of experience" contrasts rather markedly with the kinds of highly organised, formal "universal" educational resources available to most of us, which are scarce, accessible differentially to privileged groups, and often emphasise discipline and coercion.

Of course it is important to work to improve environmental education in the institutional context (Orr, 1992), but most of the crucial lessons regarding the possibilities of our relationship to nature appear at an earlier stage of our lives, as experiential and pre-institutional. A richer concept of education as involving reflection on, and interpretation of, experience treats it as a lifelong process which bursts the bounds of formal education and permeates all our life spaces. In my own life, I often tend to feel that I have learnt far more from various not formally scheduled experiences and events which have come my way than from all the formal, planned educational programs someone has carefully and deliberately slotted me into. Where I have been able to benefit from these formal sources, it is largely because the informal part of my life has created the right spaces for this formal knowledge to inhabit. The personal and experiential contexts which formed my own life commitments to environmental philosophy and activism were largely pre-institutional. The main space in which much of my own environmental education was gained was the rich and rewarding "school of the bush."

A letter from well-educated Northern Territory friends who tell me that they have chosen to send their child to "the school of the bush" with neighbouring Aboriginal children rather than through formal schooling reminds me of my own years of education in that same school, and prompts me to seek out the core of my own environmental commitment in that experience. I was born in a hessian shack in the bush as the daughter of rural poor parents with just a few years education between them. They had taken on the deprivation and unceasing labour of clearing and establishing a tiny truck farm on the poor sandstone hills to the north of Sydney in the Great Depression, as an alternative to the abject misery and passive dispossession of poor urban life. My parents' preoccupation with survival left me lots of opportunity from the youngest age to explore the fringing forest of an exciting and extremely rich natural area; our little place adjoined what is now Kuringai Chase National Park, one of the best wildflower areas in eastern Australia. My formal education took the form of "correspondence school," with my generous but overworked mother as teacher, but the bush was my real school, and provided most of my friends and many of my most important developmental and educational experiences.

I am keenly aware of the double-sided nature of the formal schooling I was later to experience, of its combined oppressive and liberatory aspects. As a poor girl, I was almost always the outsider in an educational context which denied and devalued both my class and my gender experience; but at the same time, getting an education — and both I and my parents had to struggle hard for my right to it —

provided a rare route to a kind of respect and dignity normally denied to a girl of my class, and sadly missing from my mother's life. Although I remain deeply ambivalent about the formal education system in which I have spent so much of my life, I feel that I benefited unequivocally from the "school of the bush" as a liberatory educational context. The bush was a lively and frequently sensational learning environment, one which accepted me as I was and provided a refuge from the tensions and constraints of an oppressively structured social life. The bush offered opportunities for friendship and adventure, for a rich set of imaginative and real meetings with diverse others from bull-ants to echidnas, and for self as well as other knowledge — all (seemingly) unstructured by relations of power and domination. In both my past and present political context, the bush was and remains a wondrous sphere of freedom and healing.

The large impact of false universalism in the formal education system can be illustrated by a small story about a leaf. Eventually I was uprooted from the bush and sent over a long daily distance to the big primary school in a leafy suburb on the posh North Shore occupied by solicitors and accountants, carefully planted with the deciduous English trees which expressed their colonial inheritance and class aspirations. When autumn came around, our new biology teacher asked us each to bring in a leaf, a red leaf, she said, "from home." For the occupants of the neatly Anglicised streets, where the imported trees were now turning brilliant colours, this was rather easy. For me, the request was something of a puzzle, and I sought high and low. The natural sclerophyll bushland in which our little farm stood provided no such winter-deciduous plants, but there was a small but steady supply of aging leaves from the great eucalyptus, a few of which retained some spots and streaks of brilliant colour for a day or two before reverting to the normal leathery brown of their final phase. Perhaps this was what the teacher wanted? Well, of course, it wasn't. My contribution, the wrong kind of red leaf, brought a low mark and belittling remarks. The real "lesson" we learnt was one about whose "homes" and experiences were the wrong kind and whose were not, who should be quiet and who should not, and simultaneously, which landscapes should be admired, and which passed over in silence, viewed as mere "scrub," the utilitarian background to life in the privileged deciduous suburbs.

False universality imposed patterns of dominance which could hide their poisoned fruit beneath some very noble ideals, for example the idea that all the students equally were to be encouraged and rewarded to excel, that all the resources of the school were there so that each student could realise their best. Unless you were a bright girl, of course, and you soon found out that such ideals of equality and excellence somehow didn't apply to you, that instead of being rewarded you would often be subtly punished, especially if you excelled in the wrong areas, such as science, by ridicule or by the withdrawal of support or love. You found out one way or the other (in my case, from the lips of the principal himself) that if you were a girl, high marks were a problem: that if you were going to succeed as a female, to succeed in the sphere of love, then you would actually have to *fail* in your academic performance: that any victories, especially where they involved outperforming male students, would be bought at a very heavy price. Girls had to adopt many different ways to deal with this knowledge, within the framework of two broad strategies — to rebel or to conform, to renounce the need for love, or to mutilate our lives for it. No, if you were a girl, you learnt that *yours* was not the subjectivity the institution had in mind when it spoke of opportunity and excellence. Our education was "colonising" because it allowed space for the expression of only the dominant group's experience, treating only their kind of subjectivity as real.

But it was scarcely possible to tell such stories, to articulate such wounding experience freely in personal or emotional terms; school was certainly not a place where girls were able to share and reflect on such widespread experiences. Certain kinds of personal experience were valued, others were not, and if you wanted to survive you had to learn to be sensitive to the difference. Where the value of the personal is recognised in these dominant forms in universalising education, it is often very selectively chosen, rewarded and used. It is precisely those forms of experience associated with dominant groups which tend to be recognised, the others being counted as "irrelevant," "disturbing" or illegitimate. Or alternatively, it is precisely because admitting certain kinds of experience threatens certain ways of establishing and normalising dominance that experience has to be so carefully downgraded and controlled. The eager, participatory learning it could provide is subordinated to colonising and universalising models which silence some forms of knowledge and constitute them as subordinate.

Liberatory theorists have shown how the container models and banking models support non-participatory and elitist models of teaching in which learning is conceived as a monological, one-way process (Freire, 1972). Clearly the social context in which these models are preferred is one which legitimates inequality and dominance. The exclusive preference for the abstract, theoretical and universalising model and the demotion of the local, the personal and the experiential has a similar origin. The functionality of these abstract, universalising approaches is that they deny the relevance of the student's experience not just in the interests of downgrading experience in general, but in the interests of presenting certain *other* kinds of experience as universal, that is, it has a colonising functionality. The denial of the value of each person's experience provides a way to superimpose certain dominant experiences as universal; the political force of the disembodied voice is that it provides a way to impose a set of dominant voices. The dominance of these privileged models is potentially disrupted by the presentation of "different" experience, which is why experiential presentation must be made so problematic and be so carefully controlled.

I am far from suggesting that education can simply consist in the narration of personal experience, or that there is no role for abstraction or for formal education as a vehicle for developing collective knowledge. Collective education makes knowledge communities in terms of shared patterns of meaning, common structures for interpreting and guiding experience. It can establish fruitful and creative ways for these communities to combine reason, reflection and experience. But the dominant educational systems have done much more than this, they have deeply marginalised the sphere of personal experience we need to mobilise for joyful, participatory and eager learning experiences and left the personal sources of ecological insensitivity unchallenged. To sum up, in the context of colonising education, experience can have liberatory educational potential in several ways:

- it is subversive in its potentiality to disrupt sites of privilege built on false universalism;
- it draws on fundamental resources which are fully and equally accessible as wellsprings of motivation and engagement;
- the personal is the site of concrete, sensory, emotional and bodily experience — many of the spheres devalued and denied by reason-nature dualism — the place where "differences" cannot be pushed aside as irrelevant.

These features help to explain why personal narrative has been a particularly important resource for oppressed groups in decolonising education (hooks, 1995), and why educational systems whose underlying objectives include the establishment and maintenance of various kinds of privilege structure in a deep hostility to and distrust of the personal and the narrative mode. For environmental education as a form of liberatory education, there is a related moral. The sphere of the particular and of personal experience which is devalued in institutional and universalising models is crucially important in establishing ecologically-sensitive relationships to place. It is here especially that we should seek ways to disrupt the colonising narrative defining anthrocentric relations to place and to nature as the only possibility.

Decolonising the mind: Anthrocentrism and environmental education

Ecological denial as a background condition results from certain ways of treating human identity and human relationship to nature which are deeply embedded in Western culture and highly resistant to change. For 25 centuries or more, Western civilisation has seen nature as another to be colonised, the background to the truly human life, this being defined in opposition to and "outside of" nature. More recently nature has been seen as a commodity or potential commodity, a set of replaceable, interchangeable units answering to human demand and lacking limits which might inhibit that demand. To combat this mindset, we need not only to foreground our failure to take action on ecological degradation at the analysis, research and educational policy level, but also to trace and counter these colonising and commodity attitudes at the level of environmental education for everyday life. In the context of this hegemonic model, environmental education should understand itself as a subversive discipline aimed, like anti-colonial and feminist education, at unmasking and overpowering a form of hegemonic centrism, the anthrocentric form, which can be understood as parallel structure to eurocentrism and androcentrism. A program to challenge anthrocentrism needs to aim at more specific objectives than the vaguely specified program of "boundary crossings" and "disruption" which figures in many forms of postmodernism, and to pay attention to reconstructing particular aspects of coloniser identities and to the knowledge relation associated with these identities.

The critique of androcentrism as a focus for women's studies is oriented not just to providing a framework for articulating women's experience but also one which critiques dominant masculine identities and the forms of culture which express them. Understanding the ways in which such colonising identities are opened to the (self) critical gaze can provide some helpful parallels for a similar critical enterprise in relation to the dominant culture's construction of human identity. As the preliminary to opening up the possibility of new kinds of relationship, the coloniser must acquire a certain critical attitude towards his or her own identity, and a corresponding attitude of openness and attentiveness ("listening") to the other precluded by the colonising relationship. Anticolonial education disrupts the coloniser's radical exclusion of the other, the conception of radical, natural difference between colonising self and colonised other which naturalises radical inequality and the double standard of access to consideration, so as to establish a basis for seeing the other in the same kinds of ethical terms as the self.

Anticolonial education must aim to disrupt the colonising consciousness's idea that these others are "all the same," its homogenising insensitivity to the diversity of the other's kinds and expressions. Because it defines the other entirely in relation to self, as an absence of self or as periphery to self as centre, the colonising consciousness views the other's difference as a lack or as the ground of inferiority, and denies or neglects dependency on this other and the other's order and limit (Plumwood, 1993, 1996). It aims to incorporate the other, recognising them only as a form of the self, and instrumentalises them by denying or subordinating their agency. Ecological denial is compounded of these elements of contemporary consciousness in relation to nature, producing in amplified form the distributive failure to recognise our crucial dependency on nature and its contribution in our lives which has been such a characteristic feature of the Western tradition. If, as it seems, all these anthrocentric aspects of the colonising consciousness appear in contemporary attitudes to nature, one of the main aims of a good environmental education must be to disrupt them.

Thus environmental education can try to counter radical exclusion by an emphasis on human continuity with non-human nature and by bringing about an understanding of human embeddedness in nature. It can contest dualised conceptions of the human and challenge conceptions of human virtue based on exclusion of characteristics classed as natural, stressing instead ones which acknowledge human care for and relatedness to the natural world. In the crucial area of countering backgrounding and denial, environmental education can raise awareness of how much we depend on nature, and of how this denial is expressed, for example by critiquing institutions and forms of rationality which fail to recognise this dependency on nature, such as conventional economics. It can stress the importance and value of nature in practical exchanges and education, and show how we can change systems of distribution, accounting, perception, and planning so as to acknowledge and allow for nature's needs and limits.

Countering homogenisation involves bringing about an ecological understanding of nature's amazing diversity. Incorporation can be countered by creating an understanding of nature's own complex order, and of the developmental story of nature. Environmental education can counter instrumentalism and the orientation to control by establishing some humility and sensitivity to nature's creativity and agency, and by stressing uncertainty and the extent of what we don't know. Instrumental relations to nature can be countered in various ways: for example, by promoting alternative caring and attentiveness modes of relationship to the land, by learning about non-instrumental models in other cultures, and by generating local earth stories which can place local relationships with nature in a more storied and less instrumental framework. Critiquing anthrocentrism is sometimes presented as an optional "spiritual" extra in environmental education, but if we understand anthrocentrism in the way I have suggested here, it is clear that countering it must be at the heart of any good environmental education, whether the concept is introduced explicitly or not.

It should be noted that the account I have given here, which posits anthrocentrism as parallel to other forms of hegemonic centrism,[4] is at variance with the understanding of many of the concept's critics and detractors, as well as some of its advocates. On their account, countering anthrocentrism would push us towards greater degrees of abstraction and detachment from self and from the personal. On the account of anthrocentrism given by critics of the idea (for example, Grey, 1993 and Thompson, 1990), anthrocentrism is like geocentrism. Anthrocentrism results from an excess of localism and a failure to entertain a sufficiently universalising framework; it is a corruption induced by human particularity, particular attachments to times and places, to human perspectives and frames of reference. Overcoming it is thought to involve maximising epistemological detachment, obliterating anything which speaks of or from personal experience, and conceiving nature in ways as neutral, non-sensory, and impersonal as possible (Grey, 1993).

There are then two conflicting conceptions of anthrocentrism and of countering anthrocentrism, one associated with a universalising discourse demanding the elimination of self and particularity, and one which focusses on the colonising consciousness associated with hegemonic human centrism. These conflicting accounts are reflected in opposed ideas of what we might aim to achieve in environmental education and how we might go about it. Counter-anthrocentric teaching, on the first "cosmic" account, would seem to amount to or converge with the kind of objectivist, scientific teaching which aimed at maximum impartiality and detachment from its subject matter, and strove to distance from experiential discussion and personal reference points. Since all valuing must involve selecting some states or beings in the world over others, counter-anthrocentric "cosmic" environmental teaching would have to be completely value free (Grey, 1993). Since this is incompatible with any commitment to environmental health, it is hard to see how any counter-anthrocentric environmental education is possible, and in fact this "view from nowhere" account is particularly beloved of those who denounce the whole idea of anthrocentrism. But the closely related transpersonal and detachment models are not without adherents in the deep ecology camp who have not, I think, fully taken in their implications.

This "cosmic" prescription for countering anthrocentrism via detachment is deeply problematic in its implications for environmental teaching. Its account concurs in the suppression of the sphere of particularity and the personal and converges with the methods and aims of colonising and universalising reason. The conception of anthrocentrism it is based on rests on a confusion (or set of confusions) about the relationship between particularity and selfishness (Young, 1989) between epistemological and ethical centredness, and an inadequate analysis of what is involved in hegemonic centrism in general and human hegemonic centrism in particular (Plumwood, 1996). In contrast to the universalising sweep of the "cosmic" sense of anthrocentrism, the anti-colonial account I have outlined points towards ways to counter anthrocentrism via developing forms of narrative identity sensitive to the particularity of self and place, exploring alternative modes of relationship to the colonising forms which place humans at the centre and define nature as lack.

Anthrocentrism and place-sensitive narrative

Narrative provides an important way of generating place-sensitive forms of culture and identity which further these aims by drawing together the personal, local and experiential aspects that are devalued or ignored in rationalist educational paradigms. The narrative form can be mobilised to disrupt subject/object, centre/periphery perceptions and definitions, as well as the radical exclusion involved in mechanism. The narrative is a vital part of the anti-colonial kit: it can suggest and help pass on models of human identity and modes of experiencing nature which enable us to recognise the other in nature as a unique presence, as another centre itself, rather than as an interchangeable member of a class of "resources," or as described in terms of characteristics which present it as periphery for our centre. Narrative can not only help us to interact non-instrumentally with the particular places in which we are situated, it can enable us, via origin stories, to construct identities which are defined in relation to these places which Cheney (1992) calls "storied residences." Aboriginal people in Australia draw on many of these qualities of narrative in their renditions of the unique qualities of place as conveyed in Aboriginal Dreaming narratives. (This is just one of the things such narratives convey of course; there are also many other kinds of meaning in the Dreaming stories). These features can be mobilised in wider contexts to teach ecological sensitivity and place-sensitive identity.

Recently I have been able to put some of these ideas about narrative and about anthrocentrism into practice via involvement in an intense forest conservation campaign to save an area of forest near my home which has been scheduled for a round of logging that threatens many of its unique biodiversity features. My contribution to the campaign has involved, among other things, taking groups of people into the forest to explain to them its biodiversity features, and educating the local community in the unique features of the place and the ecological relationships disrupted by logging. The scientific part of this educational task is handled well by a fellow activist with a bio-science background who talks about the biological roles of old growth forest, the rare fauna for which it is habitat, and so on. This leaves many crucial problems unaddressed however.

One problem I found was that people tended to think of the area not as an ecological whole but in terms of the polarised stereotypes of "virgin" and "logged-over" forest, often focussing on discriminating the virgin "bits" that should be saved from the logged bits that were already "fallen" and had lost all virtue, except as resources, in their eyes. I wanted people to move beyond these unhelpful "virgin/whore" stereotypes to think of the valley as a diverse ecological whole centring around the river, and to be able to meet the delightful presences that could still be encountered in both the unlogged and the logged-over forest, which I thought also deserved protection. I also wanted to encourage them to re-envision the forest as a place of origin, a specially revelatory "vision" place for this community, rather than as a narrowly economic resource for sawlogs, and so I wanted to bring out the exciting, magical features of the place. One of my most useful devices here is a narrative I wrote myself which, a little bit in the style of a "dreaming" creation story, links various of the natural features I want people to appreciate. The story introduces several of the unique features of this particular place, and explains their origin and relationship to one another in an imaginative and memorable way. We can teach in abstract terms about ecology, but narrative can teach much more, speaking simultaneously about love, death, ecological morality, and biogeographical distribution. This story draws on the scientifically established features of the place, on my personal knowledge and relationship to the place, and in various ways on elements of my own life. There are of course many ways to express and draw upon personal experience other than the simple narration of life events.

The story's heroines are two waratah "sisters": waratahs are widely admired as some of Australia's most beautiful and spectacular native plants. I relate this creation narrative to people while guiding them through the piece of forest in which the logging coupe is situated and where the two waratah species are found. The points that I particularly want people to focus on are that there are two waratahs side by side in this forest, a feature found only in this particular place, and that the nearest population of one of these waratahs is 170 kilometres to the south at a place called White Rocks, while the other waratah has its main population in this forest. I also wanted the story to mark, as well as the ferns, the rainforest, the river, and the characteristic weather (orographic rain and afternoon sea mist), another remarkable and mysterious feature of this place, the extraordinary density and species diversity of mygalomorphs (funnel-web spiders). As in many traditional stories, mine balances death and love themes, and presents love, or at least the capacity for generation, (symbolised by the colour red) as the ultimately triumphant explanatory force driving both human and non-human distribution. Here is the story.

The Waratah Sisters and the Mega-Mygalomorph

Once there were two Waratah Sisters living in the South, nestling beneath their mother, a large White Rock. The White Rock took good care of her daughters, and they grew up strong and content at her side on their breezy mountain overlooking the sea. The sisters were very happy in each other's company, and so whenever a suitor courted one of them, they turned away, and remained together. But one late spring morning, when the Waratah Sisters were out gathering red bottle-brush flowers, they noticed two dark grey cockatoos coming towards them out of the north, in a strange zig-zag flight pattern. As the birds grew close, the sisters heard them calling, weaving their own names into the most entrancing and irresistible song they had ever heard. Soon the Waratah Sisters had fallen deeply in love with the singers, the Gang-Gang brothers, and longed to be with them. Because it was the first time they had fallen in love, the sisters did not know that their longing would pass, and thought they would die from sadness if they were unable to follow their loves.

The brothers could not stay with the sisters on the mountain, for there was nothing suitable for them to eat there, but urged them to come back with them back to their home in a high valley of the mountains to the north, where they could all live together. The cockatoos took off, and the sisters ran swiftly behind, but they were slower than the birds, and just as they came within view of their destination, the afternoon mist came down, and they lost sight of their lovers. The sisters grew tired and sat down to rest by a place of many beautiful ferns, which Aboriginal people call Monga, where they had seen the brothers disappear into the mist. They were hungry and lost, and began to entertain some doubts, for the first time, about love.

As they sat there, it grew dark, and a cold wind stirred the mist. A deep call sounded nearby, and soon the sisters were aware of a presence. Silent wings brushed their shoulders, and a slow, resonant hooting began a few feet above their heads. The Gang-Gang Brothers had sent a large and clever friend, the Powerful Owl, to tell them of their whereabouts and work out a way to meet up. Between the hoots which kept her in contact with her distant mate, the Owl told the sisters that the cockatoo brothers were waiting for them at a point higher up the valley. To reach them, said the Owl, the sisters would have to pass the lair of a gigantic spider, the Mega-Mygalomorph, who had stretched her great web in a funnel-shape right across the narrowest part of the valley. At the bottom of the funnel, in a cool, dark, moist chamber she had constructed, the mighty Mega-Mygalomorph watched and waited.

From the spinnerets at the bottom of her velvety grey belly, the Mega-Mygalomorph extruded a pearly substance which solidified to form the glistening coils she wove into her intricate, silky web. So far, she had been able to catch all the creatures that tried to move through the valley, except for the owls and the cockatoo brothers, who knew how to fly above the web. The Mega-Mygalomorph had six intelligent eyes, eight black legs, and a huge flat thorax like a big shiny black hearse. She saw and heard every movement in the valley, liked her food fresh, and had never spared any creature. The Mega-Mygalomorph was doing well, daily growing bigger, while the teeming creatures of yesteryear grew ever sparser, and the valley was silent. The spider was not so much deliberately cruel as *indifferent, and a bit arrogant. The Mega-Mygalomorph never gave any thought to the sufferings of the creatures who fell into her trap, nor did she ever try to communicate with them. The Mega-Mygalomorph thought that the creatures she caught were nothing but meat, too primitive to communicate, and that for their stupidity they deserved to be eaten.*

The Powerful Owl explained that the great spider had a weak point, however: just at the top of her belly, on the underside, were two large red pouches which contained a red jelly. The spider used this substance as a kind of marinade to flavour and tenderise her victims and make them edible. Without it, there would only be a few kinds of creatures she could eat, and she would not be able to cause nearly so much damage. The pouches were the key to the Mega-Mygalomorph's growing power. What the sisters must do to get past the spider's lair, said the owl, was to creep up to the great creature when she was sleeping off one of her enormous meals, and empty these pouches. Then they would be able to pass safely through the web to the embrace of their lovers, and the valley would be safe again for them, for their children, and for all the other creatures which had once lived there in great numbers. The brothers would help them, and were waiting in a tree by the lair.

The Waratah Sisters set off into the rainforest, wondering at the wealth of delicate ferns and mosses that covered every surface, at the dim, green light and the almost unbroken leafy roof over their heads. Ahead through the trees, like a swirling silver mist, they could see the great funnel-shaped web, and soon they saw the huge spider herself, spread out on her back dozing, with her legs in the air and the red pouches clearly showing. With great courage, they rushed forward, and seized the pouches. At the same moment, the Gang-Gang brothers swooped down from their high perch to hold the pouches open. Together they emptied the first pouch without trouble, but half way through emptying the second, the spider shifted position, and the Gang-Gang Brothers and the Waratah Sisters got the red jelly all over their heads. But almost immediately the spider began to dry up and shrink, and soon she was a dried out husk that broke into a thousand tiny pieces an inch or two long, and scattered about in the forest. As she dried up, the coils of the great web that issued from her spinnerets began to liquefy again, and flowed together in a crystal clear stream of water that ran onto the ground and wound its way through the fern forest as the Mongarlowe River.

So the Waratah Sisters were able to pass through the web, and join the Gang-Gang Brothers in their place of desire beyond. The pieces of the great spider became the amazingly dense population of mygalomorphs that exists in the Monga forest today, the trap-doors and funnel-webs that live there under the ground. And if you turn over one of these funnel-web spiders today (be ***very careful*** *how you do it, because their bites kill more people than either snake or crocodile bites) you will see on its underside two little red patches, that are what is left of the marinade pouches. And that is also why both the Gang-Gang Brothers and the Waratah Sisters have glorious red heads. The Gang-Gang Brothers and the Waratah Sisters have since passed on to other loves, but the Waratah Sisters from the south still live in the Monga forest, side by side. And every spring they unfold their wonderful, glowing red heads, as a reminder of the great passion that once moved them there.*

This story, like many traditional mythic stories, may seem at first glance to be blatantly anthropomorphic, presenting non-humans in what we often like to claim, mistakenly in my view, as the exclusively human terms of intentional description.[5] In terms of my own sense of engagement with nature as both a child and an adult, what seems to me particularly important in encouraging such engagement in others is providing a sense of beings in nature as "alive," as beings at the centre of their own narratives, rather than at the periphery of ours. Narrative enables them to be understood as appearing in their own stories, possibly, but not necessarily, as the main narrators or subjects, but primarily as storied beings, where the story is about them, not in some disguised, Disney way really about us as humans. Theorists of colonisation note that the colonising consciousness regards Aborigines, for example, as objects of study rather than as subjects of and creators of their own stories (Longley, 1992), and that the bias of anthropology is towards features of cultural groups rather than the details of individual lives. Treating others in the natural world as individual storied beings counters this subject/object dualism and provides access to richer descriptions of them which recognise them as active shapers of their lives and possessors of their own interests, directions, and intentional dispositions. Conceiving nature as active, as agent (not, of course, necessarily as moral agent), and therefore as more than an instrument for our ends, goes together with conceiving it intentionally and ethically.

Seen in this way, narrative treating them as "subjects of their own lives" by no means implies anthropomorphism in any damaging sense. Rather it involves recognising other earth beings as "telling a story," which may be a developmental story about the earth, or in the case of plants and animals, may be a story in which they appear as agents for themselves, as choosers on their own behalf or on behalf of their species, as possessors and developers of their ownintentional states, and so on. The particular dispossession effected by Cartesianism, which has gone to form, quite mistakenly as I have argued (Plumwood, 1993), our conceptions of what constitutes legitimate "scientific" discourse, is the appropriation for the exclusive use of humans of mind-like attributes, and the eviction of nature from this same terrain. It is a crucial part of an ethical and anti-anthrocentric stance toward nature to restore some of this vocabulary of intentionality, both as part of the enterprise of subverting ethical dualism, and as a way to subvert the dualism of our own identities.

Thus, a story like this can be useful in a number of ways in countering anthrocentrism and the colonising consciousness that is expressed in the treatment of nature in impoverished mechanistic terms. In order to establish an openness to the other and to different possibilities for relationship, we must disrupt the closed mind which posits the other as the homogenised occupant of a radically different, instrumentalised place. "Childlike" narratives of this kind can help to open people to the richer possibilities for diverse meetings such places represent, possibilities they may have long ago closed off as part of attaining adult identity. Such narratives can establish and pass on models of human identity, knowledge and modes of experiencing nature which enable us to recognise others in nature as unique narrative presences, as at the centre of their own narratives and lives, rather than at the periphery of ours as servants or chattels. As we have seen, a key element in subverting anthrocentrism is being able to grasp others in nature as centres in their own right, rather than as interchangeable members of a class of "resources" or as described in terms of characteristics which represent them just in relation to us. This can usually be done much more swiftly and elegantly in metaphor than through philosophical critique. And such narratives can incorporate and build in, rather than simply ignoring or replacing, meticulous scientific observation, in this case drawn from ornithology, spider identifying features, and botanical distribution. The fabulous character of this particular narrative functions to draw attention to the mysteriousness of the real story of how the elements of this place were assembled, which we can only guess at, and thus to establish both humility and wonder.

There was some local opinion in favour of leaving the mygalomorph spiders (which are understandably unpopular in Australia) completely out of our educational effort on behalf of the forest, as something best not mentioned in the political context of saving the forest. I resisted this as unacceptably anthrocentric, taking the view that the spider biodiversity was one of the most powerful and significant features of the forest, and that we should not be confined to what was politically expedient. The spiders had to be given a role in any adequate creation story for this place, and leaving them out would be akin to censorship, a form of self-imposition which betrayed a colonising orientation. It would be a (potentially dangerous) denial of those confronting features that did not fit the romantic postcard fantasy of the forest, the erasure of the death theme reducing the love theme to a saccharine fantasy. As a biodiversity activist, I was concerned about demonising spiders (an all-too-common approach), and so tried to focus the negative role attributed the spider and dislike aroused in the audience not upon spiderhood, but upon further features of the spider I hypothesised — indifference and arrogance in the treatment of other species, and the ecological destruction of the valley. Since these characteristics are in fact, at the present time, primarily the characteristics not of spiders, but of a particular culture of *humans*, this was actually a subtle way of turning the tables on the usual anthrocentric assumption of human moral superiority.

The story gives the group a strong focus on the other's diversity and on appreciating this biodiversity as a source of joy and richness in our lives. But of course this story is just an opening part of a larger discussion in which the group I lead into the forest tries to understand the other's complex order, (represented in the colonising framework as disorder), as expressed in the ecosystems of the forest, and tries to focus on the other's limits (for a change) rather than on our own needs. Discussion of our own needs cannot be entirely neglected, of course, but these needs must not be allowed to determine our entire focus, as they do in the colonising instrumental "resource" framework. We try to become conscious of and view with gratitude the many services the other performs for us, taken for granted in the colonising framework. We try to understand our reliance on the other's health and flourishing (for example, our reliance on the health of the river and the rainforest), a dependency denied and backgrounded in the colonising framework. A more complete discussion would pursue these questions in a more formal and systematic framework which translated them from questions of individual consciousness to questions of societal recognition and redistribution. It would also take up the question of how our normal lives outside the forest environment contribute to the loss of this place most of us have now begun to see as much a unique and vital element in our lives as our other loved ones, and which we would now similarly risk our safety to defend. And this we may still need to do.

Notes

[1] On the concept of anthrocentrism as parallel to androcentrism and eurocentrism see Plumwood, 1993 and 1996.

[2] Thus although ethical judgement must allow for different evaluations by different evaluators (since each person's conversation with the world will be different), it does not follow that it is arbitrary, capricious or that all judgements are of equal merit. Evaluations as relationships between the evaluated item and the valuer can in turn be evaluated, for example, in terms of how deeply and fully the evaluated item is "grasped," listened or attended to, and how deeply and fully it calls forth a response from within the evaluating self, as well as by various other criteria.

[3] This is not to deny that research in these areas is underfunded, especially compared with the first category, and is presently subject to even more cutting. In the contemporary USA, for example, ecological denial has led to loss of research funding for alternative energy research and other key environmental research programs. This outcome is hardly consistent with ecological rationality and gives us further reason to be concerned about our prospects for survival.

[4] On hegemonic centrism, see Plumwood, 1996.

[5] I would argue that, although the story involves attributing to the narrative subjects, the waratahs, the intentional description of a higher order than is usually warranted, intentional description as such is not inapplicable to them.

Notes on contributor

Val Plumwood is a philosopher and eco-activist who has worked on issues of forest preservation in Australia for over 25 years. She is the author of *Feminism and the Mastery of Nature* (Routledge, 1993) which brings feminist theory and post-colonial theory to bear on environmental philosophy. She has also authored numerous papers on feminist ecology, feminist philosophy, and feminist logic.

References

Addelson, Kathryn Pyne. 1993 Knower doers and their moral problems. In Linda Alcoff & Elizabeth Potter (Eds.), *Feminist epistemology*. London: Routledge.

Benjamin, Jessica. 1988. *The bonds of love*. London: Virago.

Bordo, Susan R. 1987. *The flight to objectivity: Essays on Cartesianism and culture*. Albany: State University of New York Press.

Cheney, Jim 1992. Nature and the theorising of difference. *Contemporary philosophy* x111(1), pp. 1-12.

Feyerabend, Paul. 1975. Against method. *Verso*.

Flax, Jane. 1983. Political philosophy and the patriarchal unconscious. In M. Hintikka & S. Harding (Eds.), *Discovering reality*. Dordrecht: Reidel, 245-281.

Flax, Jane. 1985. Mother-daughter relationships: Psychodynamics, politics and philosophy. In Hester Eisenstein and Alice Jardine(Eds.), *The future of difference*. New Brunswick: Rutgers University Press, 20-40.

Fox Keller, Evelyn. 1985. *Reflections on gender and science*. London: Yale University Press.

Freire, Paolo. 1972. *Pegagogy of the oppressed*. Penguin.

George, Susan. 1993. *The debt boomerang*. London: Pluto.

Grey, William. 1993. Anthropocentrism and deep ecology. *Australasian Journal of Philosophy* 71 (4) 463-475.

hooks, bell. 1995. *Teaching to transgress*. New York: Routledge.

Haraway, Donna. 1991. Situated knowledges. In *Simians, cyborgs and women: The reinvention of nature*. London: Free Association Books.

Harding, Sandra. 1986. *The science question in feminism*. Ithaca: Cornell University Press.

Harding, Sandra. 1991. *Whose science? Whose knowledge?* Milton Keynes: Open University Press.

Johnson, Mark. 1987. *The body in the mind*. Chicago: University of Chicago Press.

Kuhn, Thomas. 1962. *The structure of scientific revolutions*. Chicago: University of Chicago Press.

Latour, Bruno. 1987. *Science in action*. Cambridge, MA: Harvard University Press.

Latour, Bruno & Woolgar, Steve. 1979. *Laboratory life*. Beverly Hills: Sage.

Longley, Kateryna Olijnyk. 1992. Autobiographical storytelling by Australian Aboriginal women. In S. Smith and J. Watson (Eds.), *De/Colonising the subject*. Minneapolis: University of Minnesota Press, 370-383.

Marglin, Frederique Apffel & Marglin, Stephen. 1990. *Dominating knowledges: development, culture and resistance*. Oxford: Clarendon Press.

Merchant, Carolyn. 1981. *The death of nature*. London: Wildwood House.

Merchant, Carolyn. 1989. *Ecological revolutions: Nature, gender and science in New England*. Chapel Hill: University of North Carolina Press.

Orr, David. 1992. *Ecological literacy: Education and the transition to a postmodern world*. Albany: State University of New York Press.

Orr, David. 1994. *Earth in mind*. Albany: State University of New York Press.

Plumwood, Val. 1993. *Feminism and the mastery of nature*. London: Routledge.

Plumwood, Val. 1996. Androcentrism and anthrocentrism: Parallels and politics. *Ethics and the Environment*: (2) Fall.

Thompson, Janna. 1990. A refutation of environmental ethics. *Environmental Ethics* 12, 147-160.

Young, Iris Marion. 1989. Polity and group difference: A critique of the idea of universal citizenship. *Ethics*, 99.

BEST COPY AVAILABLE

The Role of the University, Scientists, and Educators in Promotion of Environmental Literacy

John Lemons, University of New England

Our Common Future, prepared for the United Nations by the World Commission on Environment and Development (1987), concluded that rapid deterioration of the global environment is threatening life on earth. The threats to the global environment combined with other problems confronting humans are made more ominous when one considers that they are occurring with a current human population of approximately 5.6 billion people. Because the human population may grow to 10 billion people by the year 2030, *Our Common Future* concluded that urgent and decisive political action is necessary to prevent and mitigate more widespread environmental destruction.

Importantly, *Our Common Future* also focused world attention on the need to link economic development and environmental protection by explaining how some forms of development problems erode the environmental resources on which they must be based, and how environmental degradation undermines economic development. For instance, development that cannot afford to pay for treatment of sewage creates water pollution, which in turn limits future development options. In many developing countries, in the absence of appropriate assistance from developed nations, depletion of many natural resources is the only means that many people have either to survive or to eliminate poverty. Consequently, *Our Common Future* concluded that poverty is a major cause and effect of global environmental problems and that there is little hope of solving them unless, and until, members of the international community develop the will and means to resolve problems of human development.

To solve the twin problems of environmental degradation and economic development, *Our Common Future* recommended a transformation of nations' goals and policies to support sustainable development throughout the world. This recommendation is reinforced by many noted scholars and world leaders who believe that humanity has reached a pivotal point in history, namely, that present policies that cause environmental deterioration and deepen economic and social divisions within and among countries can continue, or new policies can be developed to manage and protect the environment more effectively on a sustainable basis and improve living standards of those in need.

One of the most important and largest global environmental conferences to address worldwide environmental and development issues was the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro, Brazil, June 3-14, 1992. Planning for UNCED began in 1990. Over 175 nations were represented at UNCED, with over 100 heads of state in attendance. In addition, UNCED was attended by 1500 officially accredited nongovernmental organizations.

Two international environmental conventions were opened for signature at UNCED: (1) the United Nations Framework Convention on Climate Change and (2) the Convention on Biological Diversity. In addition, UNCED produced the Authoritative Statement of Forest Principles and the Rio Declaration on Environment and Development. This latter declaration contains 27 norms for state and interstate behavior, many of which had never before been accepted universally.

Perhaps the most important document produced at UNCED was *Agenda 21*, which contains a description of the UNCED preparatory process and prior meetings and conventions leading up to UNCED, and proposals to guide international action in the field of environment and sustainable development well into the 21st century (Johnson, 1993; Lemons and Brown, 1995a). The document focuses on four main themes: (1) social and economic dimensions of sustainable development, (2) conservation and management of resources and development, (3) methods for strengthening the role of major groups, and (4) means of implementation. *Agenda 21* was developed for use by governments, development agencies, United Nations organizations, and independent sector groups in every area where human activity affects the environment. In fact, under the *Agenda 21* agreement, nations of the world are to develop plans to implement its recommendations by the year 1995.

The international community recognized the crucial role that higher education will have to play to promote sustainable development and environmental protection. Section 36.1 of *Agenda 21* states that education, raising of public awareness, and training are linked to virtually all areas of *Agenda 21*. Section 36.3 states that to be effective, sustainable development and environmental education should be integrated in all disciplines and at all levels of education, including the university.

This section states further that sustainable development and environmental education should deal with the physical, biological, and socio-economic environment as well as with human development. Section 36.5 goes on to state that governments and educational institutions should conduct a thorough review of curricula to ensure a multidisciplinary approach and that they should prepare strategies aimed at integrating sustainable development and environmental education into all levels within the next three years. Other sections make substantive recommendations to improve the role of education in fostering sustainable development and environmental protection.

If the UNCED conference and its documents are to be taken seriously, then it becomes necessary for universities to assess their role in furthering recommendations to implement sustainable development and environmental protection (see, e.g., Lemons, 1995). How might universities respond to recommendations to promote sustainable development and environmental protection education?

Environmental literacy

During the late 1960s and early 1970s, faculty and student interest in environmental issues increased. In part, this was due to publication of popular books such as Rachel Carson's *Silent Spring* (1962), Aldo Leopold's *A Sand County Almanac* (1949), and Paul Ehrlich's *Population Bomb* (1975) and to concerns raised by conferences such as the 1968 Biosphere Conference in Paris and the 1972 United Nations Conference on the Human Environment held in Stockholm. The early educational responses of that time necessarily had to strive to develop coherent curricula and effective teaching processes, and to some extent were experimental. Environmental education is now beyond the experimentation stage, although it is still a new field (Lemons, 1991). While most environmental programs are labeled as environmental science, environmental studies, natural resources, fish and wildlife, or the like, only recently have programs begun to be developed with an explicit focus on sustainable development and environmental protection. However, these are quite limited in number (Jacobson and Robinson, 1990).

One of the challenges confronted by those wishing to promote education about sustainable development and environmental protection is to decide what to teach, and why. Because environmental programs are entering their third decade of existence, and because they emphasize topics relevant to sustainable development and environmental protection, it seems reasonable to look to them as a basis for the further development of programs that more explicitly focus on this latter theme.

Generally speaking, two educational approaches for dealing with the environment have evolved (Weis et al., 1992). One approach focuses on the natural sciences, wherein courses might emphasize environmental biology, environmental chemistry, the earth sciences, or specific resources and management problems such as conservation of biodiversity, land use planning, and watershed management, to name a few. The other approach focuses on a fewer number of science courses and more on the social sciences and humanities, including courses such as environmental law, political ecology, environmental literature, environmental ethics, environmental economics, planning in developing countries, and social change and natural resources. Readers are referred to Disinger and Schoenfeld (1987) and Lemons (1992) for a more complete identification and description of typical courses that focus on environmental subject matter.

A number of so-called environmental competencies have been identified to assess students' knowledge of the environment, including: (1) ability to apply ecological principles to the analysis of environmental issues, including the analysis of alternative solutions to problems; (2) ability to understand how humans' political, economic, social, literary, religious, and philosophical traditions and activities influence the environment; (3) ability to understand the role of citizen participation in solving environmental problems; and (4) ability to apply action-oriented problem-solving skills to achieve conduct appropriate to environmental protection. Many of these competencies can be dealt with in a number of different academic disciplines (Lemons, 1991).

Because environmental problems transcend different disciplines, both depth of disciplinary knowledge and breadth of knowledge across disciplines are required for environmental literacy. Consequently, most environmental programs are: (1) cross-disciplinary, wherein subject matter in one discipline is viewed from the perspective of another; (2) multidisciplinary, wherein the perspectives and techniques of several disciplines focus on a problem or issue; or (3) interdisciplinary, wherein attempts are made to integrate the theoretical and analytical perspectives of several disciplines into problem-solving (Bryant, 1992). The problem of deciding what to teach is difficult, because there is no easy formula to use to resolve the question of depth versus breadth of knowledge. In addition, many universities do not have sufficient resources to meet all requirements ideally and instead seek to match their curricula to existing strengths. The problem of how to balance disciplinary depth versus breadth of subject matter confronts those wishing to develop programs in sustainable development and environmental protection as well. Regardless of how this problem is resolved, the linkages between development and environmental protection must be articulated and implemented into the curriculum.

Intellectually and practically speaking, establishing these linkages will be difficult for two reasons. First, the meaning of "sustainability" is not precise (Shearman, 1990). One general meaning might be "the continued satisfaction of basic human needs such as food, water, shelter, as well as higher-level social and cultural necessities such as security, freedom, education, employment, and recreation." Another might be the "continued productivity and functioning of ecosystems." *Our Common Future* defined sustainable development as that which "meets the needs of the present without compromising the ability of future generations to meet their own needs." Gowdy (1994) discusses three meanings of sustainability: (1) sustaining inter-generational economic welfare, (2) maximizing the time of existence of the human species, and (3) sustaining nature and its diversity. Several organizations such as the World Conservation Strategy, the World Resources Institute, the Inter-national Institute for Environment and Development, the Ecological Society of America, and the World Bank regard the term "sustainability" as acceptable but ill-defined. Regardless of the precise meaning, it is clear that the term has implications for ecological, social, and economic systems.

Second, in the words of *Agenda 21*, the linkages between sustainable development and environmental protection must focus on: (1) international cooperation and institutional arrangements; (2) elimination of poverty; (3) change in consumption patterns; (4) protection of human health; (5) human settlement development; (6) integration of environmental and development decision making; (7) loss of biodiversity; (8) loss of productive dryland; (9) loss of forests; (10) global warming caused by increases in greenhouse gases; (11) loss of stratospheric ozone due to industrial gases; (12) pollution of surface and groundwater supplies by toxic and hazardous substances; (13) management of solid wastes and sewage-related issues; (14) management fragile ecosystems; (15) promotion of sustainable agriculture; (16) management of biotechnology; (17) the role of women; (18) protection of children; (19) the role of indigenous people; (20) the role of workers, the business community, the scientific and technological community, and farmers; (21) financial resources and mechanisms; (22) transfer of appropriate technology; (23) science for sustainable development; and (24) information for decision makers. A major task of educators will be to extend the approaches, linkages, and competencies already established in environmental programs to include those necessary to deal with the issues of sustainable development and environmental protection.

Given that developing the linkages between sustainable development and environmental protection imposes additional requirements for interdisciplinarity and multidisciplinarity, another question that needs to be examined is whether, and to what extent, administrative structures are likely to foster development of successful programs in sustainability and the environment.

Traditional approaches to promoting environmental literacy

As mentioned previously, environmental programs provide the basis for a logical extension to issues of sustainable development and environmental protection. Recent surveys have identified and discussed the various types of university environmental curricula according to educational goals and program structure (Disinger and Schoenfeld, 1987; Weis, 1990; Lemons, 1992). Francis (1992) conveniently categorized programs into four types. Generally speaking, the primary purpose of all four program types is first to serve the needs of their majors and secondarily to serve the needs of a more limited number of students with other majors.

The first type are programs that serve as a basis for contemporary higher education goals, such as fostering students' ability: (1) to investigate and diagnose problems that are inherently complex and interdisciplinary and to design possible courses of action to deal with such problems; (2) to work effectively with other people from various institutions, organizations, and groups for problem-solving; (3) to communicate effectively with specialists from other disciplines and to exercise leadership abilities; and (4) to understand and debate different beliefs, values, and attitudes held by people and to develop a personal ethic for dealing with issues.

The second type of program is that designed for professional and other specialists. These programs are founded on the belief that various kinds of professional specialists and decision makers must understand and be sensitive to the environmental consequences of what they do and that they must accept responsibility for the effects of their actions on the environment. Examples of these types of programs include law, engineering, business management, and medicine.

The third type of program is that designed for addressing particular environmental issues, such as those affecting wildlife, biodiversity, pollution, population, or sustainability. Understanding each of these areas requires knowledge and skills from diverse disciplines. For example, competency in biodiversity might require: (1) depth of knowledge in one or more disciplines such as taxonomy/-systematics, population genetics, ecology, cultural history, ecological and resource economics, natural resource law, and environmental ethics; (2) skills in field/laboratory identifications of various taxa, quantitative analyses, and use of remote sensing data and geographic information systems, plus problem-solving and organizational skills; (3) understanding of and commitment to the values and ethics that promote conservation of biodiversity and a willingness to act on them professionally and personally; and (4) understanding of the role of rural populations and indigenous peoples in retaining biodiversity.

A fourth type of program is action-oriented. Such a program emphasizes the substitution of environmentally sensitive values and behavior in both individuals and institutions for the more environmentally destructive values. Put differently, such a program attempts to alter the attitudes and behavior of students so that they are more sensitive to environmental concerns.

The various types of programs have been evaluated for their efficacy, and the general consensus is that all of the types can achieve the goals of promoting environmental literacy of students, especially majors (Weis et al., 1992). Unfortunately, a major problem confronted by programs is that the total number of students receiving significant exposure to environmental issues is relatively small.

Accounts of the formation of environmental programs in universities some 20 years ago focused on the constraints to promoting environmental literacy in a greater number of students (Schoenfeld, 1979). These include: (1) intellectual problems of balancing breadth and depth of knowledge required to understand and solve environmental problems; (2) problems of bridging the natural sciences, social sciences, and humanities, including questions regarding which academic department or discipline has a proprietary right to subject matter; (3) barriers among different academic departments and programs; (4) university rewards of promotion and tenure that foster disciplinary as opposed to interdisciplinary work; (5) different reward systems among departments; (6) absence of clear criteria for evaluating interdisciplinary teaching and research; (7) policies of many funding agencies and academic journals that reject interdisciplinary initiatives; (8) reluctance of professional programs and schools to make room in their curriculum for environmental issues; and (9) lack of administrative support to develop and sustain interdisciplinary teaching and research. Presently, environmental programs still are confronted by these same constraints, and they continue to be debated without resolution in academic journals, professional meetings, and faculty/administration meetings just as they were 20 years ago (Disinger and Schoenfeld, 1987; Lemons, 1992; Weis et al., 1992). Much of the debate about these long-standing constraints has focused on the need to evaluate programs' administrative arrangements to determine how they might be improved in order to overcome the constraints. Because programs in sustainable development and environmental protection probably will be derived from more traditional environmental programs, administrative arrangements for the former programs need to be chosen with care.

Four types of administrative arrangements in general use potentially can serve as models for programs in sustainable development and environmental protection (Weis et al., 1992). These include: (1) traditional department status, (2) interdisciplinary program structure with contractual arrangements for teaching responsibilities, (3) interdisciplinary program structure with voluntary faculty participation, and (4) programs housed within existing departments.

Advantages of traditional department status are: (1) all major elements of the program are under the departmental faculty's control; (2) faculty are clustered in a common physical location, thus promoting the type of collegial interaction that is important in generating teaching and research ideas; (3) a new faculty member's programmatic responsibilities are within his/her departmental home, thus providing protection when promotion and tenure decisions are made; and (4) students have a departmental "home" and sense of identification. Disadvantages of this structure are: (1) it may be difficult to implement at some institutions, primarily because of the needs for new faculty and facilities in a time of tight budgets, as well as fear of losing some students from existing departments to a new departmental major; (2) this model may be expensive and not cost-effective if it results in the duplication within the institution of faculty expertise and courses; and (3) implementation of this model may rely heavily on split faculty appointments, which could be disruptive.

The advantages of an interdisciplinary program structure with contractual arrangements for responsibilities include: (1) the program can draw from a wide range of disciplines in a cost-effective manner, because advantage can be taken of existing faculty interests; (2) the curriculum has stability, because the program has control over some of the faculty's teaching responsibilities; and (3) greater research and teaching innovation may result from the participation of a diverse group of faculty in a single interdisciplinary program. The main disadvantages are: (1) uncertainty as to who controls the budget and decisions on faculty time/space as the program grows; and (2) all elements of program operation other than teaching, including student advising and administration, must be provided by faculty on top of their full responsibilities in their home departments. This may lead to divided loyalties, greater-than-average professional responsibilities, and a risk to faculty during decisions for promotion and tenure.

An interdisciplinary program based on voluntary faculty participation has the following advantages: (1) it is relatively easy to implement in a cost-effective manner, (2) existing courses and resources can be used in part or whole to support the curriculum, and (3) it provides a basis for interdisciplinary cooperation. Disadvantages of this model are: (1) it is fragile because it is strongly dependent upon the personal commitments of the participating director, faculty, department heads, and deans; and (2) it depends on volunteerism and on cooperation among administration and faculty to maintain a coherent program. These factors may be highly variable from year to year.

A program housed within existing departments includes advantages such as: (1) it can be implemented at low cost, assuming the presence and use of existing resources; (2) the graduates of the tracks have degrees in traditional disciplines, but with a recognizable course emphasis on environmental subjects; and (3) faculty loyalties are not divided, but rather remain tied directly to home departments. The disadvantages of this model are: (1) it risks lack of coherence and integration, with different standards among departments; (2) if the tracks are dependent on existing courses for breadth, each track is fragile, because faculty members may leave or have teaching assignments changed; and (3) there is a danger that an environmental program housed within an existing major or department will not provide the type of interdisciplinary or multidisciplinary perspective that is vital in addressing environmental issues.

Administrative arrangements for programs often represent compromises based on historical opportunities, available resources, and institutional traditions. Any of the arrangements could be implemented in some fashion at any university, regardless of its size or its particular emphasis on teaching and research. However, depending on the circumstances at any particular university, certain administrative arrangements may have comparatively more advantages in allowing for the success of any program.

Beyond these and other issues already discussed, some noted scholars are now questioning the ability of universities to respond constructively to many of the challenges in societies, including those described in *Agenda 21*.

Reform of the university

In his book *Ecological Literacy: Education and the Transition to a Postmodern World*, Orr (1992) argues that universities have failed in their task to promote environmental literacy. He argues further that our modern age may end due to impending environmental crises, and in order to survive, humanity must go beyond our present age with its systems of beliefs and practices to develop new connections among our scientific, ethical, aesthetic, and religious world views. Orr addresses the need to transcend present beliefs and practices in his treatment of sustainability, education, and the uses and purposes of knowledge. Throughout his book, he struggles with this question: What is important to know, and why? He is strongly critical of educators within the modern university because he believes they fail both to grapple with this question, consequently failing to realize the contributions of university curricula and practices to environmental degradation, and to understand that ecological literacy of our citizenry will never be achieved unless all education focuses on issues of sustainable development and environmental protection. One way to help accomplish this is to provide such a focus to traditional departments and programs.

In a series of essays on sustainability, Orr describes various meanings of "sustainability" and discusses reasons why present cultures do not live in a manner that promotes it, ranging from those factors imposed by the holders of power in our societies and therefore theoretically changeable to those factors that might be inescapable parts of the human condition and therefore not so easily changed. Orr examines root problems of sustainability, extending down to our assumptions about science, nature, culture, and human nature. He discusses contrasting approaches to sustainability that encourage a global technocracy and more efficient development and alternatives that require an ecologically literate citizenry that understands global issues and knows how to live virtuously. In another series of essays on sustainability, Orr discusses the fact that unless we redefine national security to include environmental threats to our well-being, and unless we focus relations among nations away from perpetual economic growth and competition, we stand little hope of achieving a sustainable world. Lastly, Orr emphasizes that sustainability, citizenship, and democracy are closely linked and that change promoting sustainability therefore can be achieved only by focusing on issues of participatory democracy and the development of an informed citizenry.

Orr critiques the role of the university in both contributing to and attempting to ameliorate the problems of sustainable development and environmental protection. Our universities have provided very little attention to the problems. For example, problems of sustainability are problems because they are about the terms and conditions of human survival. Despite the fact that almost all issues of politics, economics, public policy, and ecology will be affected by resource scarcity, population growth, climate change, loss of biodiversity, deforestation, ozone depletion, loss of soil, and so on, the content of most curricula in universities, with few notable exceptions, fails to deal with these problems adequately. Consequently, Orr focuses on questions about the earth's limits and their relevancy to the content and process of education, and the way in which educators define knowledge and what is important to know. Some of Orr's recommendations include a synthesis of the sciences and the humanities, a broadening of philosophical depth and breadth for all students, greater understanding of ecology and the impacts of human activities on the earth, and a system of education that blends the theoretical with the practical or experiential. Most importantly, Orr believes that universities must play a more substantial role in engaging all students to become active in fostering societal change; this implies that faculty and administrators recognize that all education should be about sustainable development and environmental protection to some degree, and that they therefore should revise their curricula substantially. Orr is a critic of the modern universities because he believes that they commit sins of omission as well as commission in failing to teach the basics about the earth, how it works, the consequences of our activities upon it, and possible remedies for the problems we generate. How much of this is normally included in standard courses in economics, political science, business management, psychology, philosophy, or even biology?

In the third and last section of his book, Orr analyzes the role of knowledge in problems of sustainable development and environmental protection. He questions whether we can successfully manage our planet, given the fact that, as judged by the state of the world and the human condition today, we have failed to manage ourselves well. He proposes that we design our human enterprises to be congruent with the limitations imposed by our ecological world and that we must stop trying to redesign nature to fit infinite human desires.

In his epilogue, Orr asks how virtue is to be taught in an age of shopping malls, MTV television, and a narrow focus on "careerism." He argues for the importance of university teachers as role models for students in their efforts to live ecologically, sustainably, and virtuously. Students, faculty, and administrators within universities not only must teach the abstract but also must practice sustainability, stewardship, and participatory democracy. Consequently, Orr proposes that universities must be laboratories to utilize the creative energies of their members to find ways to shift institutional buying power and practices so as to cause less environmental damage. These things are needed for all students, not just those in the ecological or environmental sciences. Will universities rise to the challenge and make literacy about sustainable development and environmental protection a focal point for the education of all students? Will universities become laboratories or models for sustainability? Orr says that unless they do, the world stands little chance of solving the environmental crisis.

Although Orr's case to reform the university is perhaps the most eloquent, his voice is not the only one calling for university reform. Bok (1990) and Langenberg (1991) have criticized the failure of higher education to become more engaged in resolving problems of sustainable development and environmental protection. Sigma Xi (1992) has launched a major agenda for discussion of problems and prospects for promoting sustainable development and environmental protection. One of the conclusions stemming from this agenda is that universities should be more acutely aware of the dimensions of sustainable development and environmental protection problems. In particular, they must begin to explore three basic questions: (1) What kind of a world do we have? (2) What kind of world should we want? (3) What must we do to get it? Malone (1993) argues that if universities act on their answers to these questions, they will come to understand that their responses are more revolutionary than evolutionary, which is to say that major changes in the structure and function of education will be required.

There are some signs that at least a few administrators and faculty are beginning to grapple with the question of whether the overall mission of universities should be reformed to address problems of sustainable development and environmental protection. For example, the University of Georgia's highest faculty governance body and administration recently passed a resolution that the university: (1) recognizes the critical importance of environmental problems in today's world and is committed to environmental responsibility; (2) will foster environmental studies by establishing an environmental literacy requirement by addressing environmental issues throughout the curriculum; (3) will emphasize environmental stewardship in its extension and service activities; (4) will encourage an interdisciplinary approach to teaching, research, and service that strengthens holistic environmental appreciation; and (5) will teach environmental responsibility by its own example through environmentally sound management and practices (Knapp, 1993).

Perhaps more significantly, 22 university presidents from 13 countries convened in Talloires, France, in 1990 to discuss the role of universities in promoting sustainable development and environmental protection (Cortese, 1993). These presidents developed a number of recommendations and a declaration of principles that they would adopt to make sustainable development and environmental protection education and research a more central goal of their institutions. In particular, they agreed to take the following actions: (1) use every opportunity to raise public, government, industry, foundation, and university awareness by publicly addressing the urgent need to foster an environmentally sustainable future; (2) encourage all universities to engage in education, research, policy formation, and information exchange on population, environment, and development to move toward a sustainable future; (3) establish programs to produce expertise in environmental management, sustainable economic development, population, and related fields to ensure that all university graduates are environmentally literate and responsible citizens; (4) create programs to develop the capability of university faculty to teach environmental literacy to all undergraduate, graduate, and professional school students; (5) set an example of environmental responsibility by establishing programs of resource conservation, recycling, and waste reduction at the universities; (6) convene school deans and environmental practitioners to develop research, policy, information exchange programs, and curricula for an environmentally sustainable future; and (7) work with the United Nations and other national and international organizations to promote a worldwide university effort toward a sustainable future. Since this meeting, 157 university presidents from 38 countries have signed the declaration. In addition, the Conference of European Rectors representing 490 university rectors endorsed the declaration's principles.

Recommendations to reform the role of the university to promote education about sustainable development and environmental protection might be viewed as unrealistic. However, Malone (1993) reminds us that universities have undergone substantial reform before. For example, more than a century ago a significant number of universities were charged with addressing the application of knowledge to meet the agricultural needs of the expanding population of the United States. Another reform occurred in a number of universities that responded to Vannevar Bush's proposals for the establishment of a close relationship between the government and the university research community.

Professional organizations and environmental competency

Recently, several national and international organizations serving the needs of environmental professionals have become involved in attempts to define knowledge and skills required for environmental competency. Depending on the outcome of such involvement, there could be significant implications for environmental science and related programs.

The National Association of Environmental Professionals (NAEP), is one of the United States' largest organizations serving the needs of those in the environmental profession; it also has an international membership and program. The NAEP seeks to provide its membership and other professionals in the environmental field, as well as the interested public, with a means for interaction and the opportunity for optimizing social and economic well-being while assuring the achievement and maintenance of a healthy ecosystem. The NAEP is an interdisciplinary professional society of persons engaged in all aspects of the environmental process, including scientific research, management, administration, planning, engineering, environmental law, and education. Its members are employed in the private consulting sector, industry, government, and academia.

In an attempt to promote expertise, confidence and trust in environmental professionals, NAEP sponsors an existing voluntary program to certify the competency of environmental professionals. The NAEP Certification Program provides the environmental professional with the opportunity to be judged by a board of peers to possess those special qualifications of education, experience, and accomplishment to warrant being designated as a Certified Environmental Professional. A decision to grant certification is based on a review of a candidate's educational background, applicable professional experience, letters of reference, and a written examination consisting of mandatory and elective essay questions designed to test the communication skills and technical expertise of the candidate.

Recently, NAEP has initiated a national effort to develop and implement a mandatory standardized national certification program that would be accepted by governmental and private sectors (Lemons, 1994). In March 1993, a National Certification Initiative to promote the development and implementation of a mandatory certification program was sponsored by the NAEP and other professional environmental organizations, and was launched in Washington, D.C. Hundreds of environmental professionals expressed interest in this project. Approximately 66 percent of the responses to the National Certification Initiative were from the private consulting sector, about 15 percent were from industry, and about 15 percent were from government. However, there was little representation from academia. In April 1993, the NAEP requested that the Environmental Protection Agency recognize the need for the profession to establish a unified environmental certification program and to encourage other organizations to join with it in the mutual pursuit of this objective. More recently, in June 1994 the NAEP invited selected university educators to attend a session focusing on certification and accreditation held at its annual meeting. However, a relatively small number of educators attended this session.

The National Registry of Environmental Professionals, the Institute for Environmental Auditing, the Federation of Environmental Professionals, the Institute for Professional Environmental Practice, and the Air and Waste Management Association are examples of other professional organizations that have interests in or are working on developing a mandatory national certification credential for environmental professionals.

Under a mandatory national certification program, an environmental professional would have to pass successfully the exams and other qualifying criteria required to be a certified environmental professional in order to practice. A rationale for such a certification program is that it would provide assurance to people outside of the profession that anyone certified as an environmental professional will have demonstrated his or her expertise in both general environmental practice and in one or more specialized disciplines. It also is felt that profession-wide certification will benefit government regulators and environmental professionals, who now are frustrated by the lack of standards for practice and performance in the environmental profession. In other words, regulators can use certification as a condition of licensing environmental professionals to practice in their jurisdictions, and competent environmental professionals can use their certification as a means of distinguishing themselves from less qualified competitors.

The NAEP also is considering the development and implementation of two other programs whose goals are to promote competency in environmental professionals. One is an entry level certification program designed for people with lesser amounts of experience. The goal of this program is to separate those individuals with cursory knowledge of the environmental profession who purport to be qualified to treat environmental problems from those with more extensive (but not expert) knowledge and experience in the field who had passed the entry level certification program requirements. The other is an accreditation program whose purpose would be to promote quality in college/university environmental programs and courses. This would be achieved by development of standards approved by an accrediting body for environmental and related programs at colleges and universities.

Development of mandatory standardized certification programs for environmental professionals and the development of accreditation standards for college/university academic programs are based on the premise that we know: (1) what constitutes environmental problems and the nature of their solutions, (2) what knowledge and skills are required to solve them, and (3) how to assess competency in understanding of environmental problems and their solutions. Given the wide array of environmental programs that differ with respect to educational and career goals as well as in their emphasis of subject matter, it is not clear whether this premise should be used to prescribe specific requirements for certification and accreditation.

In order for a nationwide mandatory certification program or accreditation standards for environmental or related programs at colleges and universities to be implemented, at least three questions need to be resolved with care. One question is: Who decides who or what is an "environmental professional"? The question needs to be answered with some clarity in order to measure competency and develop accreditation standards. Decisions need to be made regarding the level of education and experience that an individual must have in order to be called an environmental professional. Issues about whether certain types of responsibilities or work in certain employment areas are required to qualify as an environmental professional need to be dealt with. Another problem to be resolved is who decides these issues and on what basis.

A second question is: To what extent will mandatory certification and accreditation require a shift in emphasis of subject matter, research interests of faculty, and educational goals and philosophies for the diverse programs already in existence? Practically and philosophically, it is difficult for faculty to accept what are perceived to be limitations on their areas of specialization or on the commitments to educational goals and philosophies they hold. In addition, some faculty will feel that accreditation will control programs' content and make programmatic change more difficult.

Potentially, it will be more difficult to obtain the support of faculty and university administrators to accept program changes at some universities as compared to others. Generally speaking, the tendency of those involved in professional programs has been to focus on the practical knowledge and skills required for professional competency primarily, and to focus on the goals of a liberal arts education secondarily. Consequently, the curricula of professional programs tend to devote more time to the needs of the profession at the expense of a liberal arts education. While the emphasis on professional career training is more accepted at the graduate level, still there is the question of exactly how to balance professional training with liberal arts goals even at the graduate level. Faculty and administrators at predominately liberal arts institutions may very well be wary of accepting standards for their programs imposed by an outside accrediting body serving the needs of a profession.

Finally, a third question is: Whether and how to represent diverse interests in deciding questions about certification and accreditation? Environmental professionals work in the private consulting sector, industry, government, environmental organizations, and academia. They have been educated in diverse disciplines such as the natural sciences, social sciences, humanities, law, and engineering. The interests, goals and views of professionals from different employment areas and disciplines are sometimes different. Their views on the fundamental relationships between humans and the environment often are based on different paradigms, and they define environmental problems and their solutions differently. Consequently, the question of whether and how to develop a national mandatory certification program and accrediting standards for college and university programs requires a process that ensures the equal participation of people from different employment areas and disciplines so that competing goals, interests and views are resolved fairly. Further, participants in this process should be nationally recognized in their fields.

Ought scientists and educators advocate for public policies?

Ecologists and other environmental scientists as well as educators have important roles to play in shaping the goals of environmental public policy and in providing information useful for decision making, especially those that pertain to sustainability and ecological integrity (Westra and Lemons, 1995). A recent president of the Ecological Society of America provided numerous examples where ecological facts played at least a significant role in decision making. His examples included the role of ecology in decisions for government programs concerning ecosystem and coastal zone management, decisions to regulate pesticides, goals to promote multispecies forests, and the problem of acid precipitation. Similarly, in 1988 the U.S. Environmental Protection Agency asked scientists to design a program to anticipate environmental problems by assessing the nationwide distribution of ecological resources and trends in their future condition (Gosz, 1992). In response, scientists have developed a statistically based sampling grid-based program for Environmental Monitoring and Assessment Program (EMAP) wherein thousands of scientists are at work assessing the characteristics of seven basic types of ecosystems (near coastal lands, arid lands, inland surface waters, wetlands, agroecosystems, Great Lakes, and forests) and developing indicators for them. Likewise, other scientists such as, e.g., toxicologists develop models and methods so that the harmful effects of various chemicals and substances can be predicted and used as a basis for decision making and promulgation of regulatory standards to protect human and ecosystem health.

Despite these brief examples of the use of science in environmental decision making, I consider in the following section of this paper: Whether or to what extent the information and methods of ecology can provide the basis for environmental decision making and if so, how? Part of my reason for asking this question stems from a recent study which I directed concerning the implications of scientific uncertainty to environmental problem-solving (Lemons, 1996). The conclusion of this work is that on the whole ecological theory and more recently toxicology methods and techniques have so far not been able to provide either the largely descriptive, scientific conclusions often necessary for environmental decisions or the normative basis for public policy.

Following, I discuss several historical examples to illustrate that despite the heuristic power of ecology, general ecological theory has failed to provide a precise, predictive basis for sound environmental policy. Next, I briefly summarize some of the implications of uncertainty to environmental problem-solving; namely, that so-called scientific and legal burden of proof requirements cannot be fulfilled which generally means that activities that potentially affect environmental or human health likely will continue until such burdens of proof can be met. Because the uncertainty surrounding environmental problems makes it difficult for scientists and educators to speak out in favor of particular public policies regarding protection of the environment, I conclude with a discussion of whether scientists and/or educators in their professional roles ought to engage in advocacy for public policy regarding environmental decision making.

Generalizable theories in ecology

One well-known generalizable theory proposed by ecologists was known as the "diversity-stability" hypothesis (see, e.g., McIntosh, 1985). Simply put, the hypothesis states that the more diverse communities of species are more stable, or that some balance of nature is maintained by promoting diverse communities of species. For many ecologists, complex trophic systems and diverse communities are more stable than less diverse, or simpler, ones. On the basis of the diversity-stability hypothesis, many people have argued that decision makers should exercise caution in altering ecosystems, so as to protect biological diversity and thus maintain the dynamic stability or balance of naturally functioning ecosystems. By the late 1960s and early 1970s this hypothesis achieved the status of a proposed truth or generalizable theory and was used as one of the rationales for the passage of the Endangered Species Act in the United States (Commoner, 1971).

However, as we know this hypothesis has fallen into disrepute for a number of reasons. For example, salt marshes and rocky intertidal regions provide only two counter examples to the diversity-stability hypothesis. Salt marshes are simple in species composition, but they are stable in the sense that species composition can be relatively constant over time. On the other hand, rocky intertidal regions are relatively diverse, yet highly unstable since they may be perturbed by a single change in species composition (Paine and Levin, 1981).

Other problems have contributed to the lack of predictive power of the diversity-stability hypothesis. For example, ecologists have defined and used two of the concepts most basic to ecology — "community" and "stability" or "balance" — in ambiguous and sometimes inconsistent ways. Not only have they used different terms to represent the same community and stability concepts, but they also have employed the same terms to stand for different concepts. For example, ecologists have thought of stability in terms of: (1) variables returning to initial equilibrium; (2) how fast the variables return following a perturbation; (3) the time that a variable has a particular value; (4) the degree to which a variable is changed following a perturbation; and (5) the variance of population densities over time. These five meanings suggest a conclusion more damaging than that "stability" is a complex term. Not only are the meanings partially inconsistent, but also they do not all assume the same-state variables or parameters. Because they do not, they provide little foundation even for probabilistic or statistical claims about stability (Shrader-Frechette and McCoy, 1994).

Another interesting interaction between general ecology theory and environmental policymaking, which also raised questions about the role of general ecological theory, had to do with one of the longest legal conflicts over environmental policy wherein the United States Environmental Protection Agency challenged five New York utility companies to prove that their water withdrawals would not adversely affect the Hudson River striped bass population. After spending tens of millions of dollars researching this problem, scientists still could not estimate with any precision the ecological effects of water withdrawal on only this one species (Barnthouse, 1984).

In the mid-1960s, many ecologists urged a dramatic new approach to ecology, namely, the study of functional ecosystems using the methods of systems analysis and those of an international program of biological research called the International Biological Programme (IBP). As one ecologist put it, this was very likely the most important event in ecology in the last 30 years. The focus of the IBP was "big biology," where trophic effects in ecosystems were understood and quantified using nutrient cycles, flows of energy and matter, and systems analysis. The difficulty with the IBP, despite its successes, was that after a decade of many millions of dollars of funding for large-scale, long-term ecosystems studies, it could provide no precise theories with predictive power. Hence, the IBP provided little assistance to scientists who wished to use general ecological theories and their predictions to help justify specific environmental policies and decisions (McIntosh, 1985).

Another prominent ecological theory claiming to provide specific predictions of the type often needed for environmental problem-solving is that of island biogeography, which is, however, beset with controversy (see, e.g., Simberloff and Soulé, 1986; Noss and Cooperrider, 1994). For example, in disputes over the size and shape of nature reserves and the scope of tropical deforestation caused by various practices, island biogeography is of little help because of at least seven different problem areas: (1) island biogeographical theory underlying current paradigms regarding reserve design has rarely been tested and is dependent primarily upon ornithological data, on correlations rather than causal explanations, on assumptions about homogeneous habitats, and on unsubstantiated turnover rates and extinction rates; (2) factors other than those dominant in island biogeography (e.g., maximum breeding habitat) often have been shown to be superior predictors of species number; (3) islands are disanalogous in important ways with nature reserves; (4) corridors between islands have questionable overall value in species preservation in particular cases; (5) island biogeography often yields predictions that cannot be tested, owing to their imprecision and because of large variance about species-area relationships; (6) ecologists currently are able to determine only which types of reserves contain the most species at present, not which ones will contain the most species over the long-term; and (7) reserve shape, as such, may not explain variation in species number. The result of controversies surrounding these issues has been so great that about the only definitive thing that can be said stemming from island biogeographical theory is that what is best with respect to preserving species is to have as many and as large reserves as possible.

The sources of uncertainty surrounding the aforementioned generalizable theories of ecological problems included: (1) poor knowledge of the environmental system; (2) large variation of variables; (3) use of wrong models and measured variables and parameters; (4) unexpected and episodic events; (5) data collection practices; (6) design of laboratory and field experiments and quality control; (7) variability in test or field conditions; (8) mistakes in the choice or use of statistical models and analysis; (9) statistical design of manipulative studies; (10) variability in mesocosm or other ecosystem surrogates; (11) extraneous variables; (12) mistakes in accounting for interactions among species or the combined effects of chemicals or stressors; (13) use of parameter estimates that do not fit actual observations; (14) mistakes in computer code of simulation models; (15) use of extrapolations from short-term experiments to long-term conditions, from one community to another, from one species to others, or from laboratory results to field conditions; (16) spatial and temporal variability; (17) use of implicit or conflicting assumptions, inferences, or judgments about methodologies and interpretation of data; (18) lack of conceptual clarity about ecological important terms and concepts; and (19) use of generalizable theories that have not been tested empirically.

In terms of environmental problem-solving, what does the conclusion that ecological information and methods cannot yield reasonably certain predictions about environmental impacts suggest? It might suggest that as scientists we clamor for yet more funding to do yet more studies to gather yet more information. However, I think that this would ignore a more significant constraint to environmental problem-solving that stems from certain prescriptions of science and law regarding what is known as fulfilling burden of proof requirements.

Scientific and legal burdens of proof

As scientists, we are trained to try to add provisionally only reasonably certain information to our body of knowledge as opposed to more speculative knowledge. Some scientists recommend that the primary way to improve the utility of the ecological sciences in decision making is to judge every ecological theory on the basis of its ability to predict (Peters, 1991). Accordingly, one prescription governing traditional scientific methodology is that as scientists we should try to minimize type-I error because this is the most conservative course of action in situations of uncertainty and because it reduces the chances of accepting false positive results and adding them to our body of knowledge. Hence, scientists typically use something like a 95 percent confidence level as a basis for provisionally accepting or rejecting a null hypothesis and thereby reducing speculative thinking. Because scientists are more interested in avoiding false positives (type-I error) rather than false negatives (type-II error), they place a greater burden of proof on the person who postulates some, rather than no, effect.

However, this prescription governing burden of proof requirements in science, combined with the burden of proof requirements in law governing adjudication of environmental disputes, creates enormous practical and ethical problems with respect to public policy and decision making. In the United States, prescriptive legal burden of proof requirements exist (I assume that this is the case in other countries as well). Because many decisions about human health and environmental threats must be made in the face of pervasive scientific informational and methodological uncertainty, legal rules on the use of scientific evidence in court proceedings may determine when laws that might be used to protect human and ecosystemic health may be enforced or implemented. If rules of evidence restrict the use of scientific evidence in court proceedings to that which is highly certain, enforcing or implementing the laws may be impossible in matters where certain scientific evidence is unavailable. Therefore, rules on the use of scientific evidence in legal proceedings must be understood to be important public policy choices about when law may be enforced or implemented.

In the United States, many environmental actions are governed by the U.S. Supreme Court decision in Daubert v. Merrell Dow Pharmaceuticals, Inc., 113 S.Ct. 2786 (1993), which announced the following four pronged analysis to assist courts in determining whether evidence is relevant and reliable: (1) scientific methods used by experts to derive an opinion must be capable of being tested and capable of being shown to be false, (2) publication and peer-review of scientific methods used by experts to derive an opinion strengthens the admissibility of evidence, (3) admissibility of evidence is strengthened by the use of methods that have a known and low error rate, (4) admissibility and acceptance of expert opinion will be enhanced if the opinion is based upon methods that have been accepted generally within the scientific community. Under Daubert, evidence that establishes a reasonable basis for concern about harm but does not conclusively establish causation is not admissible. A failure to meet the burden of proof requirements under Daubert means that status quo activities and practices that might be causing environmental harm likely will continue.

It is true that laws dealing with environmental matters avoid many of the problems of admissibility in actions by giving the government, through its various agencies, the administrative power: (1) to take legal action if it determines that an activity creates a threat to the environment, and (2) to create standards and regulations that can be enforced. Through such a grant of power the government avoids the problem of having to show causation as an established fact. Instead, the government only might have to prove that an environmental threat might exist. Further, environmental harm might be presumed if the government can show a violation of the standards or regulations. Environmental law also can avoid some admissibility problems of uncertain scientific evidence by limiting judicial review of administrative actions to the record created by the administrative agency. In cases where judicial review is from the administrative record, the court does not call witnesses nor admit evidence but simply reviews the record of public comment about the proposed action prepared by the administrative agency (but the record can, and does, include public hearings and consultation with scientific experts). Because there are no witnesses or evidence heard in such court proceedings, there are fewer problems of admissibility of scientific evidence. In record review matters, expert administrators may apply expertise to draw conclusions from suspected but not completely substantiated evidence, relationships between facts from trends among facts, from theoretical projections of imperfect data, and from probative preliminary data not yet certifiable as fact. However, for such conclusions to be upheld upon court challenge, administrators must be able to demonstrate a step-by-step proof of cause and effect. In record review matters, the agency's actions are afforded deference and must be upheld if they are based upon relevant factors and are not a clear error of judgment. Consequently, in court review of an agency's administrative record the burden of proof is on those challenging administrative decisions. To the extent that a challenge to an administrative decision is beset with problems of scientific uncertainty there will be a great difficulty in meeting the burden of proof. However, if an agency's decision were made under conditions of uncertainty then a challenge of that decision would have a greater chance of succeeding.

Is there a way out of the dilemma posed by the traditional prescriptive scientific and legal norms which are designed to reduce speculative thinking and the addition of speculative knowledge to the body of science and law? Recently, a number of individuals have proposed that so-called "post-normal" science methods instead of more traditional or classical scientific methods be used as a basis for environmental problem-solving (Funtowicz and Ravetz, 1991; Lemons and Brown, 1995b). Others have suggested that concepts of ecological integrity be used as a basis for the management of public lands because the concepts reflect a more precautionary approach that takes into account our uncertainty about environmental problems (see, e.g., Lemons and Junkier in press; Westra and Lemons, 1995).

Post-normal science

The post-normal science approach emphasizes: (1) adequate formulation of problems so that data will contribute to public policy goals; (2) that most results from scientific studies will not yield reasonably certain predictions about future consequences of human activities and that many problems of protecting environmental resources therefore should be considered to be "trans-science" problems requiring research directed toward useful indicators of change rather than precise predictions; and (3) the need to evaluate and interpret the logical assumptions underlying the empirical beliefs of scientists with a view toward ascertaining more fully the validity of scientific claims and their implications. While post-normal science is not easy to characterize, it seeks a broad and integrated view of problems and places more emphasis on professional judgment and intuition and is less bound by analytically derived empirical facts. Proponents of the application of post-normal science to environmental protection maintain that its claims are more amenable for practical public policy purposes than the claims of predictive science approaches. Post-normal approaches are based more on retroduction and conceptual analysis than are hypothesis-deduction methods used in traditional scientific approaches, and by necessity they emphasize explanation and heuristic understanding of the complexities of nature rather than predictions. One result of basing decision making upon post-normal science is that type-II error would be minimized.

In environmental problems, a type-I error is to accept a false positive result, that is, to conclude that harm to resources will result from existing or proposed activities when, in fact, no harm will result. A type-II error is to accept a false negative result, that is, to conclude that no harm to resources will result from existing or proposed activities when, in fact, harm will result. In public policy decision making, if the data show that some environmental factor or perturbation has had an effect on an organism or ecological community but with, say, only a 70-90 percent confidence, the null hypothesis that there is no effect is accepted. Typically, there is a tendency by decision makers and others to assume not only that there was not enough evidence to reject the null hypothesis but that there was really no effect when, in fact, the experimental design or test was too weak or the data were too variable or too close for an effect to be demonstrated even if there had been one (a type-II error) (Cranor, 1993).

If we were to attempt to minimize type-II error, it would be necessary to calculate the statistical power of a research design or test for an environmental problem. In contrast to confidence, which is designed to minimize type-I error, power depends on the magnitude of the hypothesized change to be detected, the sample variance, the number of replicates, and the significance value. The power of a test is the probability of rejecting a null hypothesis when it is in fact false and should be rejected. The larger the detected change, the larger is the power. In situations where the detected changes are relatively small, power can be increased by increased sampling but this involves additional costs, research facilities, and time. Analysis of variance in typical environmental problems shows that the number of samples required to give a power of 0.95 increases rapidly if changes smaller than 50 percent of the standard deviation are to be detected (Cranor, 1993). If the sample size stays the same the probability of a type-I error is increased if the probability of a type-II error is decreased. Consequently, a practical problem is that a desired emphasis on avoiding type-II error must be balanced against other opportunities to use limited scientific resources to address other environmental problems. Nevertheless, given the seriousness and urgency of environmental problems it would seem that scientists should consider being more comfortable with recommending actions based on the weight of evidence (that is, by striving to reduce type-II error) rather than based primarily on confidence levels alone, especially since public policy decisions are not based simply upon probabilistic considerations but rather involve making discrete and explicit choices among specific alternatives, including those with political and economic ramifications.

The question of whether to minimize type-II error is not only scientific. Shrader-Frechette (1994a) analyzes the reasons why there should be an ethical preference for minimizing type-II error in environmental issues (thereby increasing the risk of type-I error) and why the burden of proof for demonstration of no adverse environmental harm from development or human activities should be placed upon those calling for such development or activities. She bases her conclusion on: (1) minimizing the chance of not rejecting false null hypotheses with important public policy consequences is reasonable on the grounds of protecting the present and future public; (2) the proponents of development or activities that potentially threaten environmental resources typically receive more benefits from the development or activities than do members of the public and, consequently, minimizing type-II error would result in a more equal distribution of benefits and risks; (3) natural resources typically need more risk protection than do promoters of development or human activities because the advocates for protection usually have fewer financial and scientific resources than developers or promoters of activities that potentially can harm the resources; (4) the public ought to have rights to protection against decisions that could impose incompensable damages to natural resources; (5) public sovereignty justifies letting the public decide the fate of development and human activities that potentially threaten natural resources; and (6) minimizing type-II error would allow enhanced protection of non-human species that typically receive inadequate consideration in decision making based upon cost-benefit methods.

Despite what I have said so far, while there are public policy and ethical reasons for attempting to minimize type-II error with respect to environmental and human health problems, there nevertheless are difficult tradeoffs that exist. These are exemplified nicely by the problems of conducting toxicological studies as discussed by Cranor (1993).

Cranor asks that we consider some of the scientific and public policy decisions that must be made in the field of toxicology regarding human exposure to harmful chemicals. If we assume that a wise and conscientious epidemiologist with perfect evidence but with constrained sample sizes for studying relatively rare health effects of a chemical, then this person faces potentially controversial social policy decisions in order to design and use an epidemiological study. If scientists uncritically follow classical scientific conventions and norms in their pursuit such as using the 95 percent confidence rule, contrary to what many scientists think they may unwittingly have what is called "dirty hands," which refers to the notion that they have embedded within their scientific methodology and results implicit social and public policy outcomes and have begged the policy issues at stake. In other words, in their attempt to make science rigorous in the sense of not wanting to add speculation to the body of scientific knowledge as required by the scientific profession, the regulatory questions for which the studies are done may be frustrated.

For example, consider again that typically scientific convention sets the probability of a type-I error (α) at 0.05, so that there is a 1 in 20 chance of rejecting the null hypothesis when it is true. Conventional practice also sets the probability of a type-II error (β) between 0.05 and 0.20 when α is 0.05, although this convention is less rigid than the convention for setting values of α. When α is 0.20 there is a 1 in 5 chance of accepting a null hypothesis as true when it is false — for example, the chance of saying benzene is not associated with leukemia when in fact it is. When β is set at 0.20, the power of the test ($1-\beta$) is 0.80, which means that scientists have an 80 percent chance of rejecting the null hypothesis as false when it is false. Again, the setting of these values for α and β keep the chances of accepting false positives low and, hence, ensuring with considerable confidence that results are not the result of random chance.

If we think of α, β, and $1-\beta$ as standards of proof, how much should we demand of the methods of science and for what purposes? Let us examine various tradeoffs that we might consider in attempting to answer this question.

Let us consider the relative risk of a carcinogen associated with a particular cancer. Relative risk is the ratio of the incidence rate of disease for those exposed to the carcinogen to the incidence rate among those not exposed. Let us now look at several tradeoff alternatives.

- *Alternative* 1. Assume that we want to discover whether a particular carcinogen is associated with a particular cancer. Suppose that the incidence of cancer in the general population is about 1/10,000, and suppose that being good scientists we rely upon the 95 percent confidence rule. That is, we want to be sure that when no association exists between the carcinogen and cancer, our study shows that none does. Consequently, we set α at 0.05. Suppose that we also wish to have very small odds of false negatives, so we specify that β should be 0.05. Thus, the chances of false positives and false negatives are low and equal. Suppose further that we regard a relative risk of 3 as a serious risk worth investigating for public health purposes. Given these stipulations, in order to achieve them we would have to study at least 135,191 people exposed to the carcinogen, and (for the sake of simplicity) an equal number who are not exposed in order to obtain statistically significant results at a relative risk equal to 3. That likely will be prohibitive both practically and financially. Thus, a moral consideration, the value of the most accurate information for detecting potential harms (that is, tests with low and equal chances of type-I and type-II errors), can enter at the outset of a study.

- *Alternative* 2. Next, assume everything is the same as in alternative 1 except β and the sample size. Suppose we would tolerate a lower β of 0.20, so we have only 1 chance in 5 of committing a type-II error. Given these values, we would have to study at least 77,087 people exposed to the carcinogen and the same number who are not exposed for a total of 154,164 to obtain statistically significant results with a power of 0.80 to detect a relative risk equal to 3. The difficulties of following such large groups of people would prevent the most accurate results even if type-I and type-II errors are not equal.

- *Alternative* 3. Suppose that we could not study the large numbers of people required in alternatives 1 and 2, but that we could study 2150 in the exposed and nonexposed groups, respectively. Suppose that we also want to be 95 percent confident ($\alpha = 0.05$) of results favoring the null hypothesis and 80 percent confident ($1-\beta$) of detecting an elevated risk should it exist. What relative risk can we hope to detect? At best, we only could detect a relative risk of 39, or 13 times higher than the risk previously thought "serious" enough to warrant social attention. Put differently, given the values for α, β, and N, such a study could not even detect the relative risk of concern with 80 percent confidence, when it exists. Thus, small samples, forced by cost considerations or impracticalities and a demand for accuracy, mean that such a test cannot even detect the risks of concern that by hypothesis motivated the study.

- *Alternative* 4. We might be able to detect a higher relative risk, say, equal to 3.8 by making some tradeoffs. If we kept N and α constant ($N = 2150$; $\alpha = 0.05$), β would have to be correspondingly raised to 0.6, lowering the power of the test $1-\beta$ to 0.4. Because $\beta = 0.6$, there is now, however, a 60 percent probability of mistaking a toxic substance for a benign substance by chance alone, when in fact the substance is toxic. This study now faces two problems. The smallest relative risk we could detect among the 2150 exposed population would be 3.8 which is higher than the risk of concern. In addition, we could detect that only if we were willing to take 60 percent odds of leaving that group exposed to a possibly harmful carcinogen. This is dubious both morally and as a matter of public policy.

- *Alternative* 5. By holding sample size constant, if we want to be able to detect a relative risk with 80 percent confidence when it exists, we could increase α instead of β. With a commitment to $\beta = 0.20$, the resultant α would have to be about 0.33 to enable us to detect a relative risk equal to 12. Now, we could be only 67 percent confident of not incurring false positives. Thus, even though we can reach statistically significant results for a relative risk equal to 12 (higher than the relative risk of 3 which is the level of concern) by increasing α to 0.33, one-third of the time we run the risk of mistakenly adding to the stock of scientific knowledge. According to classical conventions in science, results from such studies would not likely be published in reputable scientific journals, for the chances of type-I errors are too large. Thus, we would be tolerating results that might be considered somewhat less accurate in order to increase our chances of detecting risks of concern. Therefore, such a study would sacrifice one kind of accuracy important to the scientific community in order to try to improve the accuracy of the study for public health purposes.

More importantly, what the discussion about the above alternatives demonstrates is that there is a mathematical "tension" between the use of the 95 percent confidence rule and other public policy and moral concerns we might have. However, it must be understood that whether scientists involved in public policy-oriented research should be committed to the 95 percent rule is a normative or policy question, not a scientific one. And, as the discussion of the above alternatives suggests, if scientists use α and β values uncritically in the design of their studies and the reporting of their data, they implicitly will make some important social policy decisions of which public policy makers or the general public not well versed in statistical methodology will understand.

Problems of meeting burden of proof requirements because of informational and methodological uncertainty partially might be ameliorated by the adoption of a three-value frame for structuring theoretical assumptions pertaining to data and problem-solving (Shrader-Frechette and McCoy, 1994). Typically, scientists employ what is called a two-value frame meaning that they either reject or accept provisionally a null hypothesis. From an empirical point of view, rigorously attempting and failing to falsify a precise testable hypothesis provides one of the strongest criteria for accepting it. Thus, scientists often try to devise tests for which two mutually exclusive, exhaustive hypotheses predict conflicting outcomes. While using a two-value frame might be appropriate for research that is scientific in a strict sense, it is problematic as a basis for environmental decision making because of the aforementioned problems of meeting burden of proof requirements. In contrast, it might be worth considering whether environmental scientists ought to employ a three-value frame which explicitly takes into account uncertainty in the sense of including decision categories to accept the null hypothesis, reject the null hypothesis, or about which we have inadequate information to make a decision.

For example, scientists could present their results in a set of power functions curves. This would represent some movement away from tests of significance but would still indicate some of the objective limits to data. A power function curve would indicate the lower bounds on the relative risk that could be detected relative to particular values of α. Confidence intervals indicate the "actual magnitude of the effect as well as the precision of the estimate." Common to such presentations is that they show how the data of a test place limits on what one can infer from them. In addition, the concern to display the objective limits of data serves the scientific goal of understanding, but this information is then used in regulatory contexts for decision making, and those who must make the decisions must be able to understand the information and use it.

Lastly, another approach to overcoming some of the constraints imposed by informational and methodological uncertainty in ecology is to have its focus, insofar as environmental problem-solving is concerned, be less on discovering general theories and predictive "laws," which as previously discussed generally fail to meet burden of proof requirements, and more on using detailed natural history knowledge about one or two taxa in specific case studies as a basis for problem-solving. Several studies have shown that reasonable certain information can be obtained when ecological studies do not attempt to predict complex interactions among many species but rather focus on detailed natural history information for only one or two taxa for a particular problem at a particular time and place. While this may be true, one problem with the approach is that although it may yield reasonably certain scientific information, environmental problems are too numerous and often too complex to allow its use (Shrader-Frechette and McCoy, 1994; Lemons, 1996).

Scientists and advocacy

If we accept that environmental problems are serious and there is an urgent need to solve them, that scientific uncertainty concerning many of the problems is pervasive, that social and public policy implications often are implicitly embedded in the decisions scientists make about the methodologies and statistical design of their studies, and that there are ethical reasons for favoring the minimization of type-II error in environmental problem-solving, then the question arises as to whether scientists ought to be engaged in "advocacy science," which means using scientific information to advocate for particular public policy decisions and defending that stance as rational and ethical rather than merely pointing out the consequences of alternative positions and maintaining a stance of neutrality. Much of the following discussion concerning advocacy is drawn from Shrader-Frechette (1994b).

Certainly, it is possible that if scientists engage in scientific advocacy then it is possible that if too much bias creeps into scientific scholarship or commentary that as a society we might lose the ability to engage in rationale analysis of a situation, and if this happens then it could lead to a loss of some of our autonomy and capacity for free and informed consent regarding environmental problem-solving. Further, if scientists in their advocacy are proven wrong, this could undermine their credibility and thus would hurt both the profession and society as a whole.

On the other hand, the avoidance of advocacy also can lead to dangerous consequences. For example, approximately 90 percent of all cancers are thought to be environmentally-induced, and about one in four persons in the United States will get cancer. Had more scientists advocated a reduction in the use of suspected carcinogens, these rates might not have been so high.

The prescription to minimize making type-I error might be referred to as a form of epistemic objectivity which addresses the objectivity of our beliefs. It requires scientists to assess hypotheses and their practical or scientific consequences with no deliberate bias or misinterpretation. However, because of the prescription to minimize type-I error, the burden of proof is placed upon scientists who posit an effect from some activity that might affect natural resources.

However, there is another type of objectivity, that might be referred to as ethical objectivity, which addresses the objectivity of researchers' actions. It requires more than merely avoiding deliberate bias or misinterpretation. Rather, ethical objectivity requires us to take into account our obligations to the greater good when we assess the ethical desirability of acting on our belief in a particular hypothesis or its consequences.

Under conditions of uncertainty, should scientists speak out in favor of particular decisions or should they form alliances with environmental groups regarding use of natural resources? If Shrader-Frechette (1994a) is correct that under conditions of uncertainty there are ethical preferences to reduce type-II error in natural resource decision making, then speaking out or working with other groups with shared values to promote the public good would be warranted.

There is, of course, a need for scientists to try to conduct their work so that they are credible. However, this does not imply that they ought not to speak out on public policy issues even in their role as scientists. Making errors in science is nothing new. A number of studies have tried to assess whether and to what extent scientists' credibility is undermined by the making of errors. Most of these studies have concluded that the loss of credibility is positively correlated with deliberate intent to deceive, rather than with error alone.

Now, if scientists (or educators) are reluctant to speak out because doing so associates them with a partisan agenda, let us not forget that science itself is partisan. It represents a particular set of shared values regarding systems of belief and ways of knowing about the natural world. Funding for science is determined by political priorities, the types of scientific problems studied by academics is determined in part by the political agendas of university promotion and tenure committees, and certainly the type of science conducted by scientists in governmental agencies is determined by agendas. Consider that in 1981 the West German pharmaceutical company Hoechst gave $70 million to Harvard's Department of Molecular Biology in exchange for rights to market all discoveries made in the department and to exclude all funding and research that interfered with Hoechst's proprietary position. Jack Whitehead gave $125 million in exchange for MIT's relinquishing control over patent rights, finances, hiring, and choice of research at its biotechnology center. At many major universities, the majority of funding is from the U.S. Department of Defense. If an academic scholar or scientist takes a particular stand regarding environmental problems, he/she already is doing so within a highly partisan framework created by special interest groups. Partisan agendas are nothing new to the world of science.

Sometimes, scientists fear advocating for particular stances because they confuse being objective with being neutral (see, e.g., Shrader-Frechette 1994b). Many philosophers of science such as Thomas Kuhn, Michael Polanyi, Stephen Toulmin, and Paul Feyerabend have demonstrated how scientific methods are value-laden and that objectivity should not be confused with being neutral for the following reasons: (1) failure to criticize indefensible or questionable values implicitly gives assent to them; (2) not all ethical and methodological positions are equally defensible and if they are not, then real objectivity requires one to represent less defensible positions as such; (3) objectivity represented as neutrality in the face of possible significant hazards or threats is to serve the interests of those responsible for the threats; (4) objectivity represented as neutrality ignores the fact that objectivity is negotiated and discovered socially through grappling with alternative points of view; (5) objectivity represented as neutrality can sanction ethical relativism and therefore serve the interests of injustice, such as when some scholars refused to take a stand against the actions of Nazis for the sake of cultural relativity.

There also are consequentialist arguments in favor of advocacy by scientists which is that without it greater harm to environmental resources or public health would result without it. For example, in their advocacy scientists might be able to help prevent or mitigate problems of loss of biodiversity, global warming, and other types of problems. Through this advocacy, they might help to educate the public. Given the fact that there is pervasive uncertainty surrounding many environmental problems, advocacy of various positions encourages public discussion and helps in the understanding and resolution of problems. Again, in the absence of advocacy the interests of the status quo that is responsible for environmental problems are continued.

Saying that objectivity is the same as neutrality is the same as saying that objectivity requires treating different ethical or public policy positions as equal when, in fact, some may be more reasonable than others. However, the failure to practice advocacy can amount to a bias when other strong and vested interests are taking a morally dubious stance.

Scientists in developed nations may have a responsibility to advocate for environmental well-being because as citizens of such nations we have benefited from environmental harm brought about by our standard of living. Because we have been complicit in bringing about environmental harm, we have a responsibility to help reverse it. By virtue of the benefits scientists receive from society, they have an obligation to the public to protect its interests and to serve its welfare. And if such an obligation is said to exist, then scientists may have an obligation to engage in environmental advocacy.

Finally, I would argue that the more potentially serious an environmental problem is, the more one ought to engage in advocacy for a conservative approach, which is to say erring on the side of the protection of environmental well-being as opposed to private interests.

With respect to this point, consider the conclusion of O'Brien (1994). She notes that a few years ago a group of scientists were debating at a professional scientific meeting whether the American Fisheries Society should petition the U.S. Fish and Wildlife Service to list numerous salmon runs as endangered. To petition for the listings would mean entering into controversies that were already raging over dams, power generation, timber practices, and grazing practices that threatened the salmon runs.

The scientists at the meeting discussed the harm that could be done to the public perception of them as objective research scientists if they petitioned for the listings. They were aware that petitioning for the listings meant taking a position in the controversies.

At the same time, they also understood that they would be taking a side if they did not petition. They would be taking the side of the status quo: business as usual, standard dam practices, maximal power generation, standard timber practices, standard grazing practices, and continued salmon extinction. There was no way for these scientists, as a group, not to take sides.

Conclusion

Clearly, the challenge of environmental protection and sustainable development confronts humankind. After two years of planning, the UNCED was held in Rio de Janeiro in June of 1992. The UNCED culminated in several international conventions and declarations on the environment, including *Agenda 21*, which was adopted by the overwhelming majority of the world's heads of states and governments. By adopting *Agenda 21*, nations agreed to implement its recommendations to promote sustainable development and environmental protection; these focused on increasing environmental literacy at all levels of education.

Basically, there are two fundamental approaches to promoting education about sustainable development and environmental protection. One approach consists of improving traditional environmental programs for majors, as well as requiring or offering a limited number of courses focusing on sustainable development and environ-mental protection for nonmajor students. The other is to change the university so that there is significant infusion of sustainable development and environmental protection themes in all or most university programs. This approach requires also that the university become a role model of sustainable development and environmental protection behavior and practices. Choosing between the two approaches forces university educators and administrators to decide whether sustainable development and environmental protection should be treated as simply another subject or whether they should be viewed potentially as integrative principles leading to a substantial reform of the university.

In my view, restricting treatment of sustainable development and environmental protection issues to traditional academic departments means that while the needs of majors will be served, the education of the entire student population in matters of sustainable development and environmental protection will be more limited, as is the present case with respect to environmental literacy for nonmajors at most universities. In part, this will be due to the consequences of administrative arrangements and levels of support provided for programs, which often are mired in competing university politics. A traditional approach is tantamount to the view that problems of sustainable development and environmental protection can be overcome primarily by educating experts (i.e., majors) who can provide the specialized knowledge to solve the problems. Such a view is counter to recommendations made in *Agenda 21* and by people such as Orr (1992), Knapp (1993), and Malone (1993) that an informed citizenry worldwide is a necessary condition for problems of sustainable development and environmental protection to be overcome. These latter recommendations argue for reforming the university so that its primary mission is to promote education about sustainable development and environmental protection for all students and to model its behavior appropriately.

University faculty and administrators will differ on which approach they favor. In deciding, they must assess whether and to what extent, if any, universities can be said to be fulfilling their role to educate about matters of sustainable development and environmental protection. If faculty and administrators believe that universities should be doing more, then they must further assess whether the future prospects for traditional approaches are likely to meet the challenges posed by sustainable development and environmental protection, or whether substantial reform of the university is desirable or feasible.

At the very least, problems posed by sustainable development and environmental protection warrant that the university community grapple in a serious and comprehensive manner with how to respond to the problems. Granted, this will not be easy. Those concerned about the problems must be willing to become involved in a sustained intellectual dialogue with their colleagues within the university to identify and evaluate changes needed to promote sustainable development and environmental protection, including assessing administrative arrangements for programs. Involvement in the politics of the university is necessary, because the university is comprised of people with competing values, beliefs, programs, and budgets. In part, the response of the university to problems of sustainable development and environmental protection will be based on the ability of people concerned about the problems to persuade others that changes are needed.

Most faculty members are less than enthusiastic about university politics and certainly are loathe to take more time from teaching and research to become more involved politically. But if they do not become more effective in persuading their colleagues from other disciplines as well as administrators about the need to promote sustainable development and environmental protection education to meet the needs of the 21st century and beyond, then who will?

In addition to the problems that confront attempts to promote environmental literacy, pervasive scientific uncertainty poses problems for many scientists and educators regarding whether they ought to adopt a particular public policy stance regarding environmental problems. Many fear that they will lose credibility, or that they risk the veneer of neutrality in the classroom.

Despite the heuristic value provided by ecology's information and methods, pervasive scientific uncertainty constrains its predictive capabilities and therefore in many instances scientific and legal burden of proof requirements are not able to be fulfilled when dealing with environmental problems. A consequence is that typically the activities and practices that threaten environmental amenities are more likely to continue unless and until the burden of proof requirements can be met.

In a strict scientific sense, an emphasis on reducing type-I error minimizes adding speculative information to the body of scientific knowledge. However, given the fact that environmental problems are both serious and urgent, consideration should be given by scientists to form conclusions based upon the weight of evidence and not just on the confidence about evidence, and therefore attempt to reduce type-II error when possible. This would entail the use of what is becoming known as "post-normal" science for environmental problem-solving, and also would be consistent with recommendations from the international community contained in *Agenda 21* that a precautionary approach be adopted for environmental problem-solving. This would mean that the burden of proof should be shifted to those who advocate activities that might seriously affect the environment or human health to demonstrate that the proposed activities will result in insignificant harm. That is, given the seriousness and urgency of environmental problems, under conditions of uncertainty it is better to err on the side of protection of ecosystem and human health. Further, following the obligations to be ethically as well as epistemically objective, scientists ought to play a role in the advocacy of environmental problem-solving. Sound science is needed to make informed decisions about the environment but it is not only more science that we need to save a quality environment, what little of it is left. What we need is more people willing to fight for it.

Notes on contributor

John Lemons is a professor in the Department of Life Sciences at the University of New England, Hiddeford, Maine. He served as Editor-in-Chief of *The Environmental Professional*, the official journal of the National Association of Environmental Professionals (NAEP) from 1990 through 1995, and in 1994 he received a Distinguished Service Award from NAEP for meritorious work. Professor Lemons is also a Fellow of the American Association for the Advancement of Science.

Professor Lemons has authored approximately one hundred articles on national park management, conservation issues, high-level nuclear waste disposal, climate change, environmental ethics, sustainable development, and related issues. He has also produced six books, including *Sustainable Development: Science, Ethics, and Public Policy* by Kluwer Academic Publishers; *Scientific Uncertainty and Environmental Problem-Solving* by Blackwell Science, Inc.; and *Perspectives on Ecological Integrity* by Kluwer Academic Publishers.

Notes and references

Barnthouse, L.W. 1984. Population biology in the courtroom: The Hudson River controversy. *BioScience* 34:17-18.

Bok, D. 1990. *Universities and the future of America*. Durham, North Carolina: Duke University Press.

Bryant, B. 1992. Toward a curriculum for environmental programs. *The Environmental Professional* 14: 293-301.

Carson, R. 1962. *Silent spring*. Boston, Massachusetts: Houghton Mifflin.

Commoner, B. 1971. *The closing circle*. New York: Knopf.

Cortese, A.D. 1993. Building the intellectual capacity for a sustainable future. Pages 1-9. In B. Wallace, J. Cairns, Jr.,

& P.A. Distler (Eds.), *Environmental literacy and beyond*. Virginia Polytechnic Institute and State University: Blacksburg, Virginia.

Cranor, C. 1993. *Regulating toxic substances: A philosophy of science and law*. New York: Oxford University Press.

Disinger, J. & Schoenfeld, C. (Eds.). 1987. Focus on environmental studies. *The Environmental Professional* 9:185-274.

Ehrlich, P. 1975. *The population bomb*. Mattituck, New York: River City Press.

Francis, G. 1992. Environmental education in academia: Escaping the institutional impasse. *The Environmental Professional* 14:278-283.

Funtowicz, S.O. & Ravetz, J.R. 1991. A new scientific methodology for global environmental issues. Pages 137-152. In R. Costanza (Ed.), *Ecological economics*. New York: Columbia University Press.

Gowdy, J.M. 1994. Progress and environmental sustainability. *Environmental Ethics* 16:41-56.

Gosz, J. 1992. Review of EPA's Environmental Monitoring and Assessment Program (EMAP). Washington, D.C.: Committee to Review the EPA's Environmental Monitoring and Assessment Program, EMAP, National Research Council.

Jacobson, S.K. & Robinson, J.G. 1990. Training the new conservationist: Cross-disciplinary education in the 1990s. *Environmental Conservation* 17:319-327.

Johnson, S.P. (Ed.). 1993. The earth summit. The United Nations conference on environment and development (UNCED). London: Graham & Trotman/Martinus Nijhoff.

Knapp, C.B. 1993. Changing course: University policy on environmental literacy. Pages 11-18. In B. Wallace, J. Cairns, Jr., & P.A. Distler (Eds.). *Environmental literacy and beyond*. Blacksburg, Virginia: Virginia Polytechnic Institute and State University.

Langenberg, D. 1991. Science, slogans, and civic duty. *Science* 252:361-363.

Lemons, J. 1991. Structure and function of environmental programmes. *The Environmentalist* 11:297-311.

Lemons, J. (Ed.). 1992. Environmental science and studies programs. *The Environmental Professional* 14:277-375.

Lemons, J. 1994. Certification of environmental professionals and accreditation standards for university programs. *BioScience* 44: 475-478.

Lemons, J. 1995. Sustainable development and environmental protection: A perspective on current trends and future options for universities. *Environmental Management* 19:157-165.

Lemons, J. (Ed.). 1996. *Scientific uncertainty and environmental problem-solving*. Cambridge, Massachusetts: Blackwell Science, Inc..

Lemons, J. & D.A. Brown (Eds.). 1995a. *Sustainable development: Science, ethics, and public policy*. Dordrecht, The Netherlands: Kluwer Academic Publishers.

Lemons, J. & Brown, D.A. (Eds.) 1995b. The role of science in sustainable development and environmental protection decision making. *Sustainable development: Science, ethics, and public policy*. Dordrecht, The Netherlands: Kluwer Academic Publishers.

Lemons, J. & Junkier, K. In press. The role of science and law in the protection of national park resources. In R.G. Wright (Ed.), *National parks and protected areas: Their role in environmental protection*. Cambridge, Massachusetts: Blackwell Science, Inc..

Leopold, A. 1949. *A Sand County almanac*. New York: Oxford University Press.

Malone, T.F. 1993. Is there hope for humanity? In B. Wallace, J. Cairns, Jr., & P.A. Distler (Eds.), *Environmental literacy and beyond*. Blacksburg, Virginia:Virginia Polytechnic Institute and State University.

McIntosh, R.P. 1985. *The background of ecology: Concept and theory*. Cambridge: Cambridge University Press.

Noss, R.F. & Cooperrider, A.Y. 1994. *Saving nature's legacy*. Washington, D.C.: Island Press.

Orr, D. 1992. *Ecological literacy: Education and the transition to a postmodern world*. Albany: University of New York Press.

Paine, R.T. & Levin, S.A. 1981. Intertidal landscapes: Disturbance and dynamics of pattern. *Ecological Monographs* 51:154-178.

Peters, R.H. 1991. *A critique for ecology*. Cambridge: Cambridge University Press.

Schoenfeld, A.C. 1979. The university-environmental movement marriage. *Journal of Higher Education* 50:290-309.

Shearman, R. 1990. The meaning and ethics of sustainability. *Environmental Management* 14:1-8.

Shrader-Frechette, K.S. 1994a. *Ethics of scientific research*. Lanham, Maryland: Rowman & Littlefield Publisher, Inc.

Shrader-Frechette, K.S. 1994b. An apologia for activism. In F. Ferré and P. Hartel (Eds.), *Ethics and environmental policy*. Athens: The University of Georgia Press.

Shrader-Frechette, K.S. & McCoy, E.D. 1994. Ecology and environmental problem-solving. *The Environmental Professional* 16:285-291.

Sigma Xi, The Scientific Research Society. 1992. *Global change and the human prospect: Issues in population, science, technology, and equity*. North Carolina: Research Triangle Park.

Soulé, M.E. & Simberloff, D. 1986. What do genetics and ecology tell us about the design of nature reserves? *Biological Conservation* 35:19-40.

Weis, J.S. 1990. The status of undergraduate programs in environmental science. *Environmental Science and Technology* 24:1116-1121.

Weis, J.S., Lemons, J., Foust, R., Godshalk, G.L., Miller G., & Wenger, R.B. 1992. Report of the workshop on undergraduate environmental science education. *The Environmental Professional* 14:363-370.

Westra, L. & Lemons, J. (Eds.) 1995. *Perspectives on ecological integrity*. Dordrecht, The Netherlands: Kluwer Academic Publishers.

World Commission on Environment and Development. 1987. *Our common future*. New York: Oxford University Press.

BEST COPY AVAILABLE

Professionalization and Environmental Education: Are We Guarding Against Charlatans or Losing the Passion?

Marilyn MacDonald, Simon Fraser University

To professionalize, or not to professionalize?
That is the question:
Whether 'tis nobler to muddle along
In enthused amateurish quest for some green Grail,
Or join th'exalted ranks of experts
That wield their close-caught knowledge reasonably,
In staunch defence of naked clients' interests.
Should only experts take arms against the world's troubles,
And by opposing name and own them? Or, should
The great collective we,
Admitting hubris, greed, despair, unrequited caring
And all the thousand lesser sins that flesh is heir to,
Care less; dare instead to embrace life's joyous chance
As world's meaning? To live, to wake;
To wake, perchance to dream; ay, there's the hope;
For in that wakening to life what dreams may come
Of some still-undiscovered country in whose bourn
We rest, then return, shape-changed, to dance again,
Caught up in the aeonic beat, the flickering Protean patterns,
Th'evolving, playful, sensuous processional of creativity?
Thus conscience doth make empassioned lovers of us all,
And thus the verdant hue of resolution
Endows our every enterprise with great pith and moment,
And moves us all to action.

(modified from *Hamlet*, with apologies to Wm. Shakespeare, qtd. more accurately in Oxford Dictionary of Quotations, p. 433)

The dilemma of having to choose between passionate commitment and objective credibility

Let me confess, right now, that I am a professional, or at least that I have spent fourteen years in training to be, and eighteen years in working as one. Well, more accurately, I guess that should be working as five — biologist, ecologist, teacher, manager, and professor — rather than one, a combination resulting from a mixture of interests, financial accessibility, job openings, and serendipity. So, if you are expecting to find an unbiased argument either for or against the professionalization of environmental education (EE), be forewarned that this paper is not any of those things.

First, it is biased, in that I was already, and remain, a firm believer in quite a few things, like feminism, environmentalism, peace activism, critical pedagogies, and informed consent in relation to science/technology. Having worked with a diverse mixture of professionals, volunteers, activists, and so on, in all of those areas, I am also more favourably inclined to those people who were/are involved enough in some aspect of the greater good to be willing to take action and to commit their time and energy to working with others for positive change. And, to be honest, I still find it difficult to distinguish between those who are mostly altruistic, but who have learned to explain themselves in the language of the self-oriented; and those who are mostly self-interested, but who have learned and co-opted the language of the other-oriented.

Second, it is both for and against professionalization, in that I argue for those strategies that will improve the clout of environmental education, and increase the chances that we, as a species, will learn to live sustainably. In particular, we must come to terms with adulthood and the ability to love this planet (to borrow from the title of Edward LeLorrain and Terry Nash's 1982 National Film Board documentary about social justice activist, Helen Caldicott). So, some aspects of the ideal of professionalization are useful — learning more about the world around us, devoting part of a society's resources to the support of study and research, engaging in an ongoing and equitable exchange of practical knowledge, and fostering the freedom to concentrate on our own interests and talents because of that equitable exchange.

On the other hand, I argue against those strategies that improve the clout of environmental education by benefitting the few at the cost of the many. In particular, we must approach with care (in both the sense of caution and of loving concern) those aspects of professionalization that perpetuate social inequalities and unsustainable human activities. So, some aspects of the reality of professionalization are harmful — elitism, the problematization of everyday life, scientism and a narrow understanding of creativity, to name a few.

To start with, why would I consider myself to be a professional? In terms of post-secondary education (which seems to be the hallmark of profession these days), I began in fine arts at a small liberal arts university. However, deciding that I had far more questions than answers, I switched to science. Major — biology, minor — chemistry, and thesis research on the biophysics of how intertidal marine algae cope with the sudden changes in temperature and moisture that are their twice-daily lot. After that came graduate school, with a Doctorate in ecology from a large professional-school university for seven years of research on how some plant species,

ERIC Full Text Provided by ERIC

depending on the circumstances, will go from collectors' treasure to farmers' bane almost overnight (evolutionarily speaking).

Looking back at those two educational experiences, I now can appreciate their continuing influence on my understanding of professionalism. It took a while to reach that appreciation, to value what, in many ways, seemed to be diametrically opposed views of that world.

On the one hand, the small, liberal arts experience — reading *Oedipus Rex* as part of a fourth year thermodynamics course; debating theories of prime numbers late at night with a mix of people from Fine Arts, Home Economics, and Biology; having a Work-In (volunteering in the community) as our contribution to the campus radicalism of the 1960s; getting prime ice-time and administrative support when we decided to start a women's hockey team.

On the other hand, the big, professional school experience — being a laboratory demonstrator in a Pre-Med biology course where the students sabotaged each other's work, desperate for that extra quarter mark; developing the professional skills of research design, fundraising, and information control; debating the place of science in society with graduate students from Malaysia, Ethiopia, Ghana, Britain, India, New Zealand, Canada, the USA; seeing the Phys. Ed. Department trim their budget by cutting out the most expensive women's team (ice hockey), rather than spreading the cutbacks around equally. Its taken another twenty years to discern the interplay, the complementarity, the potential for change that such apparent opposition represents.

From 1976 to 1980, I worked as a consultant, carrying out environmental impact analyses, biophysical inventories, and all sorts of short-term studies designed to accomplish clients' goals with what we hoped was a minimum of environmental damage. During that time, I took a number of courses in law and business, the most memorable of which was one in which we developed and distributed a legal handbook for battered women — one of my first university courses in which there was a direct, practical connection to the community around me. It was enlightening to watch a disparate collection of individuals whose voiced concerns centred on grade point averages become a cohesive group. They focussed on lobbying the Ministry of Justice and the police department to support the handbook because it came directly from, and spoke to the needs of, the women that were being battered. And they got that support at a time that members of parliament found such battering uproariously funny.

Then, from 1980 to 1990, I managed research and development contracts for the federal government, in such areas as biotechnology, environmental monitoring, and alternative energy sources. Throughout this period I developed and offered, on an essentially voluntary basis, courses and workshops on women and science & technology, and women and environment. These educational efforts, for me, provided a counterbalance to the worldviews that I found in bureaucracy, and in the Master's in Business Administration that I half-finished. After trying, unsuccessfully, to offer a course on sustainable development to middle and upper management in the government, I decided to go back to school full-time. At the back of my mind was, and still is, a conviction that we are approaching, if not already at, a crossroads in human relationship with our surroundings. Given my earlier experiences, learning to be an environmental educator was fast becoming something that I felt obliged to do.

I chose Queen's University's education program, one of the few in Canada to offer experiential and outdoor education. After a brief stint of supply and contract teaching, I wound up at Simon Fraser University, in the Department of Women's Studies, teaching science-related courses (science & technology, health, environment, competition) and doing research on environmental activism and on female-friendly science education.

Now, as far as I can tell from all of that, and relying as well on the opinion of reputable sources, I am a professional. I have a university degree (well, three and a half of them), so the Canadian federal government concurs (Statistics Canada, 1993c). I have had at least nine years of "applicable professional environmental experience," more than five years of which was "in a position of responsible charge and/or responsible supervision," and I have worked in environmental planning, assessment, research and education, so the National Association of Environmental Professionals is willing to accept that occupational status for me (Lemons, 1993). I teach, both for Simon Fraser University and privately, about environmental issues, so the North American Association of Environmental Educators admits me to its group of like-minded professionals (Simmons, Knapp & Young, 1990).

Also, except for an unknown number of environmental activists who are not university-trained for their work, most of the people I've met who educate about the environment — biologists, geologists, teachers, lawyers, accountants, physicians, landscape architects, writers, artists and so on — are professionals for the same sorts of reasons.

Yet, time after time, at conferences and meetings, in newsletters and journals, I hear calls for the professionalization of environmental work, including education. That implies that there must be something less than professional about what we professionals are doing now. My best guesses for what those lapses would encompass include the breaking of professional ranks through interdisciplinarity, the dependency on grassroots activism to raise public awareness and acceptance of the environment as problematic, and the ruination of the verifiable legitimacy of professional knowledge through the addition of aesthetics, emotions, morality and spirituality. As a result of such lapses, it is difficult to demonstrate that foundational core of esoteric and vital knowledge which would serve as the bedrock of the environmental professions.

One argument in favour of the professionalization of environmental education might go something like this:

- Since we (environmental educators) believe that many people (including corporations as legal entities) are behaving in ways that are unlikely to be sustainable in the long run; and
- because we believe that many of these people are behaving unsustainably because they are merely profoundly ignorant of environmental knowledges rather than negligent, dishonest, malicious or malevolent; and
- because we believe that our special education, by enlightening that profound ignorance, will change those behaviours for the better, sustainably speaking; and
- because we believe that we do have a special education, unique in its amalgamation of knowledges from all legitimate disciplines (including education), which is sufficient and necessary to achieve sustainability; then
- it is worthwhile for us to develop and promulgate that special education as widely as possible; but
- because we believe that we have an uphill climb ahead of us in trying to enlighten Others about their environmental ignorance; and
- because we believe that we can lessen the slope of that climb if those Others accepted our legitimacy/authority, and their ignorance; and
- because most, if not all of us, have been in situations in our lives where we have had to accept our ignorance in relation to the state-sanctioned legitimacy and authority of someone else (e.g., teachers, professors, doctors, lawyers, automobile mechanics, plumbers); and
- because we believe that we live in a society which grants the highest status and cognitive authority to the professions, and in particular those professions which are considered to combine a science-based epistemology with a practice that is essential to everyone's daily life; and
- since we can safely assume that our special education fits well with those considerations, based as it is on knowledges from all legitimate disciplines and vital as it is to sustainable human existence; then
- it is worthwhile to adopt for professionalization a model based on those high-status and cognitively-authoritative exemplars in order to ensure that our special education be as widely practised and as efficacious as possible.

It is this argument that I will critique in this paper because I consider it to be not only untenable, but a threat to the achievement of equitable sustainability for human societies. We risk starting a process in environmental education that will focus on a true professional ideal of objectivity at the expense of passionate relationship with our surroundings. And, if we do that, then we will have become part of the problem, maintaining a worldview of detachment, reductionism, competition, hierarchy and rational self-interest.

The following two quotations, combined with the opening poetic statement, are intended to frame this opposition of choices.

> I really had not been waiting breathlessly for Mr. Shawn's [editor, *New Yorker* magazine] reaction [to the draft of her 1962 *Silent Spring*], yet once I had it I knew how very much it meant to me. [I went] into the study and played the Beethoven violin concerto — one of my favorites, you know. And suddenly the tension of four years was broken and I let the tears come. I think I let you see last summer what my deeper feelings are about this when I said I could never again listen happily to a thrush song if I had not done all I could. And last night the thoughts of all the birds and other creatures and all the loveliness that is in nature came to me with such a surge of deep happiness that now I had done what I could — I had been able to complete it — and now it had its own life . . . (Rachel Carson qtd. from Brooks, 1972; in MacDonald, 1993; p. 108)

> The core meaning of [professional] life is central to the work situation, and occupational skills are regarded as non-transferable — the property of a specific community. Charlatanism and quackery are, in this sense, a creation of professionalism and not the cause of it. That is to say that periods in which it is claimed that charlatanism is rife and needs to be stamped out are just those periods when an occupation is attempting to establish or struggling to maintain a monopolistic position. (Johnson, 1972; p. 57)

This, then, is the heart of the dilemma which attends the professionalization of environmental education. Will it result in a body of knowledge, a training process, a collegial association, a code of ethics, and standards of practice that nurture a passion for life on Earth? Or will those trappings of the professions encourage elitism, a view of the world as a set of problems awaiting solution, and the marginalization of all environmental knowledges and relationships except the immediately remunerative? Or, like most dualisms, is the answer somewhere and sometimes in between those extremes?

For me, Rachel Carson is an example of the true professional, committed to both the benefits and the costs of her special knowledge. She felt fully alive in this world because she had a passion for life on Earth — a reverence for the integrity of the species that coexist here, a fundamental sense of wonder about the robust fragility and interconnectedness of things. In the oldest and widest sense of the word, *passion* is about giving oneself up to some external force, to something which has meaning beyond the individual interest. So Rachel Carson felt that she could take no more joy in her surroundings if she did not give herself up to their protection, to passing on to others the gifts of knowledge that she had received from Nature.

Also, in a very integral way, passion is about readiness, about being prepared to be fully aware. Rachel Carson's protection of other species was dependent upon her loving knowledge of marine and terrestrial ecosystems, and on her ability to portray that loving relationship. Her skills and knowledge of biology were based in her childhood spent on a farm, and were strengthened and expanded through university training, government employment, voluntary research and the authoring of several books on marine ecology. To be able to have such experiences, to become prepared, took a great deal of time and energy, but gave as much back in terms of moral, aesthetic and cognitive development.

We often forget that Carson received her Bachelor's degree in 1928, a little over fifty years after Gracie Lockhart became the first woman in the British Commonwealth to obtain such a degree. Also, Carson finished a Master's degree in aquatic biology at Johns Hopkins University in 1930, a time when, in neighbouring Canada, women made up 23.5 percent of full-time university undergraduate enrolment, and held twelve of the ninety-eight doctorates that had been granted since 1867; a time when, of the total Canadian population, only 0.3 percent were enrolled at university, and 1.8 percent were working as professionals. To become, and survive as, a professional biologist was a major accomplishment for Carson in and of itself (MacDonald, 1993; in prep. a.).

The third aspect of passion is its motivation to action, despite the odds against, or for, success. Without such passion, it is easier to play life safely, to follow the norm, to let someone else be responsible to go beyond our reasonable expectations of duty. So Rachel Carson, dying of cancer, might have retired to her seaside home to spend her last days in peace, hoping that someone more powerful — perhaps John Kennedy — would take care of things. But she didn't, and thus kept intact her deep happiness in the loveliness of Nature. And so the awareness raised by *Silent Spring* resulted in the U.S. President's Scientific Advisory Committee *Report on Pesticides* in 1963 which condemned industry and government alike and set out guidelines for the certification of pesticide safety, and rippled out to contribute to the formation of the U.S. Environmental Protection Agency and the Canadian Department of the Environment in 1970, and to the United Nations Biosphere Conference in 1968 and Conference on the Human Environment in 1972, and so on and on (McCormick, 1989).

Interestingly, it is this motivational aspect of passion that is most closely linked to the origins of the term, *profession*. Both terms entered the English language, or more accurately, reflected the English construction of reality, from theological beliefs and attitudes of the 1200s. That is, *passion* was derived from the Latin word for suffering, and referred to the sufferings endured by Christ and subsequent Christians in holding to their faith. *Profession* came from the Latin for a public declaration and referred to the vows taken on entering a religious order, and soon expanded in meaning to include the actual act of joining, and the religious order itself. A dedication to public service, then, flowed from passion and was evidenced by profession.

By the 1500s (and the beginnings of the European scientific revolution), the meanings of *passion* and *profession* had begun to both secularize and separate. Passion had come to mean any feeling by which the human mind was powerfully moved, and profession, the occupation in which someone declared themselves to be skilled and knowledgeable. In particular, such occupations involved the application of science to human affairs, and were epitomized by the three learned professions of divinity, law and medicine (Barnhart, 1988; Kimball, 1992; Simpson & Weiner, 1989). The vestiges of that linkage between passion and profession remain with us in the myths and stories that make up the cultural life of particular professions. Thus, for my training to become a biologist, the ideal of a scientist was presented in biographic sketches of Pasteur, Koch, Darwin, Einstein, Curie, Leopold, Snow and others — scientists whose desire to wonder empowered their willingness to spend their lives in doing so, but scientists whose passion was inextricably linked to social reform.

Yet most of the critics of Rachel Carson's *Silent Spring* represented her passion as failure. They portrayed her as a spinsterish charlatan, a menopausal babbler who put emotional fancies in the way of objective scientific progress. That most damning of possibilities — that she was thus unprofessional — was used to question the truthfulness of her findings. At the same time, such critics had no particular concern with the bias that might result from the ethical (and legal) requirement for professionals to put the client's interest first. Nor were they much exercised by professional self-interest in the maintenance of a monopolistic control over particular bodies of knowledge (MacDonald, 1993).

It is important to bear in mind that these critics were appealing to a "true professional ideal" that had become common sense by the 1930s. This ideal grew out of changes accompanying the Western scientific and industrial revolutions, where experts became necessary intermediaries between society and the knowledges and practices of those revolutions. As Douglas and Wildavsky (1982) argued, every society exists within a field of infinite risks and chances. In order to make sense of things, societies focus on only a small selection of such possibilities, developing a repertoire of taboos, omens, pollutions, rituals and so on, that mark the boundaries between order and chaos, provide guidelines for social sustainability, and designate the specialists who mediate at those boundaries. For knowledge-based societies (as industrial and post-industrial societies are termed), those specialists were, and are, the professionals. The rituals, taboos and omens related to their vital knowledges — health, justice, learning and so on — are largely constructed by them in dialogue with the rest of society (Frangsmyr, Heilbron, & Rider, 1990; Haber, 1991; Hacking, 1990; Kimball, 1992; Stehr, 1994).

Over the last four or five hundred years, then, reason replaced intuition, natural cause the supernatural, scientific explanation the religious, and human-controlled progress the order of things — at least in theory (Bowler, 1989). The ideal professional, the mediator of the Science-Technology-Economic Growth-Social Progress Paradigm, was a highly-trained worker dedicated to an ethic of public service, and sufficiently autonomous in knowledge, competency and action to accomplish that service. Such a worker brought objectivity and reason to bear to find universal solutions to societal problems, while maintaining the creative flame of genius through a competitive inner vigour that safely harnessed passion (Battersby, 1989; Schiebinger, 1989).

Yet, this "true professional ideal" is, for all its apparent historic depth, a relatively recent one. For example, the term *scientist* was first proposed in 1833 as an analogy with *artist*, to apply to anyone involved in scientific pursuits — from nature writers to bird watchers to self-funded inventors and experimenters. By the turn of the century, this conception of scientist had narrowed to the professional ideal. The proliferation of state- and industry-funded programs for research, development and marketing was accompanied by the growth of the societal institutions necessary to produce such professional scientists and to exclude the amateurs, volunteers and self-educated (Bynum, Browne & Porter, 1981; Rossiter, 1982, 1995; Shepherd, 1993).

It is also worth noting that this professional ideal was, and still is, not considered to easily include women, visible minorities, aboriginals, non-Europeans and other groups marginalized in Western societies (Code, 1991; Harding, 1986, 1993; Longino, 1990; Noble, 1992). So, for instance, Herbert Spencer, who coined the phrase, "survival of the fittest," argued in 1873 that women's physical and mental development ended earlier than men's, to leave them sufficient resources for childbearing and rearing. Such arrested development meant that women exhibited the following:

> . . . a perceptible falling short in those two faculties, intellectual and emotional, which are the latest products of human evolution — the power of abstract reasoning and that most abstract of the emotions, the sentiment of justice — the sentiment which regulates conduct irrespective of personal attachments and the likes or dislikes felt for individuals. (qtd. in Newman, 1985; p. 17)

For Spencer, as for many social Darwinists, the only people who did not fall short were upper class, northern European, fully-abled men, the norm against which all else, human and non-human, was measured. Such men were naturally suited to the intellectual and ethical demands of professional life because they, and only they, had the necessary vigour to subdue passion with reason. Whether through intergroup conflict, family violence, or hostile climate, survival of the fittest had produced the *status quo* of industrial Victorian England. To tamper with that order of things — to have women mimic men, the poor ape the rich, or the lower races attempt the achievements of the upper — risked the extinction that had been the fate of so many other species (Newman, 1985).

Thus, for people like Spencer, admitting the abnormal to the professions was constructed as a danger to that abstract reason, that detached and neutral consideration of the important and relevant facts of societal problems. However, as many people have gone to great effort to demonstrate, the workers in those professions were far from detached and neutral. As Johnson (1972) argued in the earlier quotation, the organization of professions centred around the exclusive ownership of work skills and knowledge, in order to create and maintain a monopoly on the sale of their particular labour. The concepts of *charlatan* and *quack* were not created at random in the 1600s, to be opposed, and give greater legitimacy, to the meaning of *profession*. They were to represent the risks that society faced if monopoly were not supported — the superficial, pretentious and fraudulent mimicry of the words of science-based knowledge, without the deeper, vigourous and virtuous understanding of the true professional. Meaning *to babble and pratter*, imitative of the aimless croaking of barnyard fowl, these concepts concretized the dangers to veridical knowledge which the unfit represented.

Lest we assume that we have outgrown such stereotypical thinking, consider that a recent survey of women and men in twenty-five countries found that the adjectives most often considered applicable to men included active, adventurous, dominant, forceful, independent, logical, progressive, strong, unemotional and wise. Those most often considered applicable to women included affectionate, attractive, dependent, dreamy, emotional, fearful, sensitive, sentimental, sexy, softhearted, submissive, superstitious and weak (Williams & Best, 1990, cited in Mackie, 1991). Which set of adjectives most closely matches the "true professional ideal"? which the likely charlatan?

Before searching for alternatives to the argument posed at the beginning of this paper, I will explore in some greater depth the meaning of both environmental education and professionalization. In particular, I argue that the failure to realize many of the goals of environmental education, the sheer diversity of EE approaches, and the potential number of EE professionals contribute to a desire to simplify, to consolidate, and to increase the status of EE. However, professionalization is not a simple process, complicated as it is by our hidden understandings of professionalism, and by the context in which the process is played out. Thus, for instance, we may want to pursue some New Environmental Paradigm vision of a professional as someone who has moved beyond charlatanism and the territorial imperative.

L'embarras des richesses divers — too much choice can seem like a bad thing

Environmental education is both as old as life on Earth, and as new as the early 1970s. In the sense that education is about developing from a latent or potential state, or inferring from available information (Allen, 1990), then engaging in the process of educating oneself or others about one's surroundings is a characteristic of living beings, along with respiration, consumption, growth, reproduction, and ceasing to be.

From the *Escherichia coli* who, learning of nearby amino-acid-rich delicacies, shifts into the production of the appropriate digesting enzymes; to the *Canis lupus* who, watching someone die of strychnine poisoning, thereafter avoided sheep carcasses; to the *Quercus rubra* who, perceiving an increase in damage to its or to its neighbours' leaves, steps up its levels of tannin; to the *Mulier sapiens* who, seeing grasses on a garbage pile, envisaged horticulture; life has been and is a continual round of receiving and transmitting information, and of developing the schemata, the strategies and actions involved in gambling for existence. From quantities of sunlight to measures of biodiversity, we live embedded in 5 billion years of a web of coevolving and accumulated environmental knowledge (MacDonald, 1986).

However, in the sense that education is about intellectual, moral and social instruction about our surroundings, especially as a formal and prolonged process (Allen, 1990), then environmental education is still in gestation, at least for humans living in a global village. We have only begun to recognize the need for it, to formulate its purposes and content, and to devise the methods for its promulgation. In fact, the term, *environmental education*, is less than thirty years old, first appearing in Western academic literature in about 1968 (Schoenfeld & Disinger, 1987).

Since 1968, however, something educational has definitely happened. Some combination of the intellectual, moral and social has worked to increase human awareness of, and willingness to take healing action for, the state of the environment. For example, over three hundred thousand people (mostly in the United States) celebrated the first Earth Day in April, 1970. Just two decades later, an estimated half billion people in a hundred countries worldwide took part in Earth Day, 1990 (Gregg & Posner, 1990; McCormick, 1989).

Riley Dunlap and other sociologists have suggested that Western societies, as part of this environmental awareness, are undergoing a fundamental change in the beliefs, attitudes and values that they hold about the world around them. Such a change — a shift in paradigms — is characterized by a replacement of many of the common sense understandings of industrialized societies with concepts more in keeping with sustainability. A number of terms were used for the older paradigm or worldview, including Human Exceptionalist, Human Exemptionalist, Dominant Social, and Western. Each was meant to capture a particular aspect or outcome of human activity. Taken all together, they marked that older paradigm as positivist, reductionist, imperialist, hegemonic, and obsessively capitalist (Table 1).

In contrast, the New Environmental (or Ecological) Paradigm would consider human and non-human values as well as the material and measurable world, attend to context and relationship, focus on sustainable community, and seek to tread lightly, to achieve some steady-state economy of reduction, reuse, recycling and rethought need. As shown in Table 1, consensus would replace conflict, cooperation replace competition, and voluntary simplicity replace conspicuous consumption. It is this new paradigm, or something very like it, that is central to environmental education. Our present conception of environmental education is the result of an ongoing process of international cooperation, interwoven with concerns about social justice and the sustainability of life on Earth. In the 1970s, the United Nations' Educational, Scientific and Cultural Organization (UNESCO) and the United Nations' Environment Programme (UNEP) sponsored a series of conferences to define environmental education. By the early 1990s, this cooperative effort had produced over thirty publications on specific aspects of EE. As Marcinkowski et al (1990) summarized:

> The ultimate aim of EE is to aid citizens in becoming environmentally knowledgeable and, above all, skilled and dedicated for working, individually and collectively, toward achieving and/or maintaining a dynamic equilibrium between quality of life and quality of the environment. (p. 1)

Environmental education was expected to be transdisciplinary, holistic and a life-long process. In terms of curriculum, this education would involve a foundation knowledge of ecological concepts such as energy flow, biogeochemical cycling, evolution, and homeostasis; an awareness of human cultural (social, political, economic, psychological) factors related to environmental decision-making; a competency in critical thinking and values clarification; and an ability to translate all of this learning into effective action. The National Association for Environmental Education reflected this understanding in its Mission Statement:

> NAAEE maintains the following guiding principles. Environmental Education should:
>
> - consider the environment in its *totality* — natural and built; biological and physical phenomena and their interrelations with social, economic, political, technological, cultural, historical, moral, and aesthetic aspects,
> - *integrate knowledge* from the disciplines across the natural sciences, social sciences, and humanities,
> - examine the scope and complexity of environmental problems and thus the need to develop *critical thinking* and *problem-solving* skills and the ability to synthesize data from many fields,
> - develop *awareness and understanding of global problems, issues,* and *interdependence* — helping people to think globally and act locally,
> - consider both short and long term *futures* on matters of local, national, regional, and international importance,
> - relate *environmental knowledge, problem-solving, values* and *sensitivity* at every level,
> - emphasize the role of *values, morality* and *ethics* in shaping attitudes and actions affecting the environment,
> - stress the need for *active citizen participation* in solving environmental problems and preventing new ones,
> - enable learners to play a role in *planning their learning experiences* and providing an opportunity for making decisions and accepting their consequences, and
> - be a *life-long process* — should begin at a preschool level, continue through formal elementary, secondary, and post secondary levels, and utilize non-formal modes for all age and education levels. (Simmons, Knapp & Young, 1990; 2nd page, unnumbered)

Central to the effectiveness of this environmental education was the development of morally mature humans. As Caduto (1985) pointed out:

> environmental education should not be confined to providing the learner with knowledge but should develop environmental attitudes and values which reflect awareness of the surrounding environment and acceptance of the responsibility for actions to resolve environmental issues and problems. (p. 2)

He noted that educators could enhance moral education by knowing the learner's stage of functioning in moral reasoning, and by challenging the learner with examples of substantive moral dilemmas which permitted the articulation of the nature of the dilemma, the identification of

Premises Within the Worldviews

Human exceptionalist/Exemptionist paradigms (HEP/HEP)

(1) humans are exceptions to (or exempt from the laws that regulate) the natural world because they have culture;
(2) cultural changes can occur faster and to a greater extent than can natural ones;
(3) human differences are mostly social and therefore changeable;
(4) cultural accumulation is infinite and all problems are soluble.

Dominant social paradigm/dominant Western worldview (DSP/DWW)

(1) humans are apart from and above the rest of nature;
(2) material growth can go on indefinitely;
(3) scientists/technologists can find solutions to any problems;
(4) change is progress, progress change;
(5) rationality and enlightened self-interest lead, in the long run, to the best allocation of environmental resources.

New environmental/new ecological paradigms (NEP/NEP)

(1) humans are one of many species on earth;
(2) human purposive action must be understood within a web of cause, effect and feedback;
(3) the world is finite, and has a carrying capacity for humans which relates to other species;
(4) humans must cooperate to share resources, and avoid individual exploitation (especially of public goods);
(5) scientific and technological "solutions" are not absolute because of side-effects, uncertainty and synergistic interactions.

Implicit/Associated Differences Between Major Groups of Proposed Worldviews

	DSP/HEP/HEP/DWW	**NEP/NEP**
metaphor	frontier, battlefield, machine/clock	Birthplace, web, spaceship/mother
carer	entrepreneur	environmentalist
archetype	warrior/hero/father, lady bountiful	steward, housekeeper
exhibits	autonomy, instrumentality, transcendence, rationality, universality, progress	embeddedness, expressivity, immanence, intuition/empathy, particularity, integrity
environment	symbolic/cultural or social system-dependent	built/human-altered or natural (physical and biological)
characteristic	opportunistic, exploitive, boom and bust, anthropocentric, abundance/depletion, material affluence, synchronic competition	community-oriented, reciprocal/interdependent, steady state, ecocentric, scarcity (diversity), equality/quality of life, diachronic cooperation

Table 1. Key concepts from environmental sociology about some of the worldviews of humans about their surroundings. (Buttel et al, 1978; Dunlap & Catton, 1979; Dunlap & VanLiere, 1978, 1984; Hsiao, 1986; Pierce et al, 1987; Steger et al, 1989)

BEST COPY AVAILABLE

alternatives and probable consequences, and the development of a framework within which to decide on how to select the good or right path of action.

In other words, environmental education was expected to push the boundaries not only of our current knowledge of ecological concepts, but also of our understanding of moral maturity and of the nature of the good. Whether deontological or consequentialist, measures of goodness were more and more strongly tied to the sustaining of community, and the community in consideration was to be planet-wide and multi-specied. The search for a model of moral relationship extended beyond the simplistic market metaphor of rational agents bargaining for a basket of social rights on a free and equal basis (e.g., Cahn, 1995; Thomashow, 1995; Westra, 1994).

How successful has environmental education been? There is no question that we have pushed the boundaries of human understanding of what is good. More humans than ever before are aware of environmental problems caused by human activities, and are uncertain of what best to do to ensure a sustainable future (e.g., Brundtland, 1990; McCormick, 1989; Rogers, 1993).

In the 1992 *Health of the Planet Survey* conducted in 24 countries, the Gallup Foundation reported the following:

> Widely viewed as an elitist issue just two decades ago, the state of the environment has become a major concern of citizens throughout the world. People living in both rich and poor nations have come to see environmental deterioration as a serious problem and a growing threat to the health and welfare of humans, and express strong support for environmental protection. (Dunlap, Gallup & Gallup, 1992; p. vi)

Canada was near the top of the list of worried citizenry. About 90 percent of Canadian respondents were concerned about environmental problems, and about 87 percent felt that environmental deterioration would negatively affect the health of their children over the next 25 years.

Such concern was equally matched by, for example, the Philippines (94 percent concerned about environmental problems, 81 percent about the effect on their children's health), Mexico (83 percent, 89 percent respectively), and the United States of America (85 percent, 83 percent respectively). Indeed, there was as much variation within as between countries grouped by income. Put another way, for low, middle and high income countries alike, nobody was sure which environmental problems were the most serious, who (or what) had caused them, or how to make things better. The solutions of modernity — institutionalized scientific research and technological development, growth-focussed mass production and consumption, bureaucratized government/industry — seemed to have become part of the problems (Dunlap, Gallup & Gallup, 1992).

While there is no question that we've pushed the boundaries of our understanding of the environmental good, it is hard to measure the progress we've made towards the full implementation of environmental education. Thus, the same global poll that found that many people were concerned about environmental problems also indicated that only about 13 percent of the respondents were members of groups that worked to protect the environment, about 57 percent avoided products which harm the environment, 56 percent would be willing to pay higher prices to protect the environment, and about 60 percent would choose to protect the environment even at the risk of slowing economic growth. Again, there was as much variation in responses within as between countries grouped by income. In general, then, our worry and concern about environmental problems have not yet been translated into any consistent action (Dunlap, Gallup & Gallup, 1992).

This gap between concern and action may be reflective of a failure to achieve the global goals of environmental education. These goals — the widespread awareness of the foundational concepts of ecology, combined with a better understanding of human decision-making, and an education conducive to moral maturation — have received more lip service than actual support (Moyad, 1990).

As McErlean, Williams and Wittwer (1995) noted, most environmental education efforts have been concentrated in the natural sciences and engineering, and leave out social, ethical and religious considerations. Also, in a society in which formal education is largely reserved for the young, EE seems to be aimed at preparing for life well after the Year 2000 rather than now. Also, EE often seems to be concentrated on correcting the ignorance of the young, as if that will be sufficient to prepare them for the complexities of adulthood. Finally, they argued that the low priority given to EE has doomed it to insignificance. They prepared an "Environmental Education Index," a comparison of the allocation of U.S. national resources amongst various goals, to emphasize this low priority. Selections from that Index include the following:

- Bush administration request for mathematics and science education: $1.9 billion;
- Administrative request for military recruiting efforts: $1.9 billion;

- Amount Pentagon spent per day from 1980-1991 on developing, testing, evaluating, and buying new weapons: $400 million;
- Percentage of adult population estimated to be scientifically literate: 7%;
- EPA request for all EE activities under National Environmental Education Act in 1992 and percent of EPA budget: $13.4 million and 2/10 of 1%;
- EPA research grant to University of Michigan consortium to develop a "national" environmental education curriculum: $1.2 million;
- Federal advertising subsidy to Gunge, a Japanese underwear manufacturer: $1.6 million. (McErlean, Williams & Wittwer, 1995; p. 264)

Most of the criticisms which McErlean, Williams & Wittwer raised against environmental education in the public schools could also be applied to post-secondary and non-formal EE as well. Thus, the Canadian Council for Human Resources in the Environment Industry compiled a list of post-secondary environmental training in Canada in 1995/96. Of the over eight thousand courses described in that list, the majority were concentrated in the pure and applied natural sciences, focussing on foundational ecological concepts, and skill development for remedial environmental protection (MacDonald, in prep.b.).

What about life outside of school and academe? At the corporate and governmental level, the growth in demand for environmental education has been a part of a much larger general demand for environmental goods and services (e.g., pollution monitoring and control, environmental research, waste handling). Businesses which produced such goods and services were combined, in the early 1980s, into a category termed the Environmental Industries. This new sector of the economy had, and has, a tremendous potential for growth (Basta, 1992; Bennett; 1991; Ernst & Young, 1992). By 1994, Industry Canada and Environment Canada estimated that some 60 to 70 thousand people were employed in that sector. They also estimated that:

> Canada's domestic market for environmental goods and services is approximately $11 billion and is expected to grow at 10 percent annually to $22 billion by the year 2000 . . . . The world market for the environmental industry is growing rapidly and may reach as much as $600 billion by the year 2000. (pp. 8,9)

For a variety of reasons, including consumer pressure, legal liability, standards of business, and future-oriented thinking (Petulla, 1987), corporations and governments began to invest in environmental education (Canadian Council for Human Resources in the Environment Industry, 1994; US Environmental Protection Agency, 1992). However, the emphasis in such non-formal education has been on skill development for remedial environmental protection. For example, in 1995 and 1996, the Canadian Standards Association, the Conference Board of Canada, the Environmental Managers' Association, the Canadian Environmental Industry Association, and the Canadian Institute of Chartered Accountants, amongst others, all offered workshops on ISO 14000, a 1996 set of international standards for Environmental Management/Auditing. The main intent of such standards is to ensure that legislated and corporate environmental requirements are well-integrated into corporate planning, reporting and day-to-day practices. They do not address such issues as true environmental pricing, the social justice of global restructuring, or the nonmarket evaluation of whether a business or economic sector even ought to exist.

Some attention has been paid by corporations and governments to transdisciplinarity, values clarification and moral development. For example, the Management Institute for Environment and Business (MIEB) (Pennell et al, 1991), in its *Business and environment: a resource guide*, compiled a support network of educators for corporate reference. The MIEB included in that network representative educators from accounting and finance, management, marketing, natural resource management, production and operations management, strategic management, and "business-and-society" studies. Out of a list of 195 environmental educators, only 18 (about 9 percent) taught courses on, or did research in, business ethics.

Finally, there is a third sector of society — volunteers — that provide environmental education which is neither state- nor market-sponsored. That sector, as we will discuss later, represents a major source of competition in attempts to professionalize environmental education, and is a source especially vulnerable to charges of passion-blinded charlatanism.

At the volunteer level, numerous environmental groups, from the Friends of Clayoquot to Pollution Probe and the World Wildlife Fund, have provided field trips, educational materials and a range of other resources aimed at increasing public awareness of environmental issues and actions. Thus, if the 1992 Gallup poll is any indication, there were some 3.3 million potential environmental educators in Canada in 1991 (i.e., the 12 percent of the total population who are members of environmental groups). An unknown percentage of these volunteers would have been professionals, donating their time and effort either in, or outside of, their area of expertise. However, the potential number of volunteers who could contribute to environmental education is even greater than that 3.3 million.

As Duchesne (1989) revealed, volunteering is an important part of life for most Canadians. In a survey of the period from November, 1986 to October, 1987, she found that about 27 percent of Canadians over the age of fifteen (30 percent of women and 24 percent of men) do volunteer work with formal volunteer organizations; and about 66 percent (69 percent of women and 64 percent of men) do informal volunteering. However, of that work, only about 1 to 2 percent was directly identified as environmental. Yet other types of volunteer organizations include health, education, law, recreation, religion, arts and culture, and public benefit. If we consider the interdisciplinarity of environmental education, then some percentage of the work done in those organizations should be both educational and environmentally-related. A similar argument could be applied to informal volunteering, in teaching, coaching, solving problems, doing yard work, driving others to appointments, helping the local community in general, and so on.

While environmental volunteers and activists seem concerned with all the goals of effective environmental education, the thoroughness and consistency of such education is often suspect. That is, they decide to volunteer from a wide variety of motivations, ranging from the social through the material to the spiritual; they bring to volunteering a diversity of age-, class-, race-, educational- and ability-related experiences; and they retain a willful control of the hours, the efforts and the material benefits that they will contribute (Day & Devlin, 1993; Falk, 1992; Fischer & Schaffer, 1993; Wuthnow, 1991). They both provide, and engage in, a practical and experiential education.

This kind of cooperative, learner-centred, self-directed and integrated (knowledge, moral consideration and action) opportunity is difficult to provide in either a formal or non-formal setting. However, such education often provides a piecemeal, superficial and often single-issue-oriented understanding of environmental concerns and relationships. The lack of organized training is, in part, an outcome of the very commitment that attracted activists in the first place. That is, volunteers often join an environmental group to take action to bring about a particular good. Given that there never seems to be enough time or resources, then any demand for structured education — for personal benefit — seems selfish. Thus, even the reformers are caught up in the beliefs and attitudes of the Dominant Social Paradigm, through reaction against it (MacDonald, in prep. a.).

In summary, we have failed to achieve the global goals of environmental education — of combining foundational ecological concepts with an understanding of human decision-making and moral maturity in a holistic, transdisciplinary and lifelong learning process. Indeed, the environmental education which we have achieved often seems more firmly rooted in the Western Worldview and Human Exemptionalist Paradigms than the New Environmental one (see Table 1). Natural sciences without social sciences, arts and fine arts; facts and theories without moral maturation; classroom and computer-based learning without practical *in situ* experience; rational objectivity and problem-solving instead of passionate relationship — we have come quite a ways in the last few decades, but not nearly far enough.

Yet it is not just that we have failed to achieve the global goals of environmental education. The diversity of all these educational activities — at the elementary & secondary, post-secondary, corporate & governmental and conservation levels — is in itself often considered a problem. From the vantage point of the learner, there must seem to be a bewildering array of possibilities for learning about one's surroundings. Television documentaries, magazine exposés, school board evening courses, corporation consciousness-raising sessions, activist demonstrations, and all the formal educational efforts provide an apparently limitless selection of environmental problems and solutions.

At the same time, we seem to be building up a set of stories that suggest that effective environmental change depends on unity and simplicity. So, for example, we *know* that the Montreal Protocol on restrictions to CFCs came about because the ozone experts agreed to talk about their commonalities (i.e., there was substantial disruption of upper atmospheric ozone formation) rather than their differences (i.e., the various estimates of rate, extent and persistence of disruption) (McCormick, 1989). Or we learn that various business associations argue that their members would be good corporate environmentalists if there were "one-stop shopping" for municipal, provincial and federal environmental rules and regulations, and clear proof that such rules and regulations saved more than they cost (Buchholz, Marcus & Post, 1992). And such assumptions about unity and simplicity create, or add to, a demand to establish some coherence and quality control amongst environmental educators.

However, such coherence and control is made difficult by the very diversity of environmental education. For example, even if we just focus on the existing eighty or so professions in Canada, it is hard to tell who is actually, or could potentially be, an environmental educator. For one thing, environmental educators work in a wide range of contexts. Consider the North American Association of Environmental Education (NAAEE), whose mission statement was discussed earlier. It was established in the early 1970s as a professional association to "assist and support the work of individuals and groups engaged in environmental education, research and service"; and has a diverse and active membership of "environmental professionals" who work in three interactive sections:

- *Non-formal education section* — is composed of individuals who work in education centers, zoos, museums, government agencies and industry. Their work often targets the public, youth groups, and schools in an informal setting.
- *Environmental studies section* — is composed of individuals who work in higher education, including universities and four-year and two-year community colleges. The Section encourages a broad interdisciplinary approach to natural resources management and environmental problem-solving.
- *Elementary and secondary education section* — is composed of individuals who work in schools, school administration and higher education as teachers. They are involved in environmental education in the formal school setting as well as in the training of pre-service educators. (Simmons, Knapp & Young, 1990; 2nd page, unnumbered)

In support of "the analysis and understanding of environmental issues and questions as the basis for effective education, problem-solving, policy-making, and management" (Simmons, Knapp & Young, 1990; 2nd page, unnumbered), the NAAEE has published monographs and conference proceedings on such things as environmental activism and international environmental education. It has also sponsored twenty-four annual international conferences; and is preparing for the twenty-fifth one in San Francisco in 1996, and the twenty-sixth in Vancouver in 1997.

As indicated in a recent NAAEE survey, its members were/are involved, in order of descending abundance, in non-formal (37 percent); elementary and secondary school (27 percent); conservation (22 percent); and post-secondary (13 percent) education (McCrea, pers. comm.).

Assuming that this range of abundance in the NAAEE is indicative of the distribution of environmental educators in Canada in general, we can attempt to estimate the size of the pool of potential professional environmental educators here. Table 2 illustrates the result. The easiest to enumerate are the educators in the formal part of the system, the categories that contain about 40 percent of the members of NAAEE. Included in formal education are university professors, post-secondary teachers and assistants, college instructors, secondary school teachers, elementary and kindergarten teachers, guidance counsellors, and school administrators. If environmental education is interdisciplinary, then all of these professionals could potentially contribute something to such a transformative way of understanding. This grouping of educational professionals represented, in 1991, about 586 thousand people. Of those professional educators, 343 thousand (or about 59 percent) were women.

Harder to enumerate are the educators in the non-formal and the conservation education categories, the categories which contain some 59 percent of the NAAEE membership. Potential environmental educators in these categories would be the assorted consultants who provide their clients with information on the social and natural sciences (categories marked with a single asterisk in Table 2). These include policy and program officers, researchers and consultants in health and social issues, natural and applied science, economics, economic development and marketing, education, recreation and sports, government and other such areas. This grouping represented about 100 thousand professionals (of which 50 thousand, or about 50 percent, were women), bringing the total number of potential professional environmental educators to 686 thousand (373 thousand, or 54 percent, of whom were women).

However, if NAAEE's membership distribution is any indication, we are still missing some 780 thousand potential professional environmental educators — that is, if 59 percent of those educators are engaged in environmental education outside the formal educational system, and if we assume that the ratio between potential and actual environmental educators is the same in both formal and non-formal situations. Those missing professionals could be drawn from such areas as the natural and applied sciences, arts and culture, health, and social issues (categories marked with a double asterisk in Table 2). This grouping, for 1991 in Canada, included some 1.2 million professionals, of which about 579 thousand (48 percent) were women.

Professional occupation	**Total #**	**# Women**	**# Men**
University professor	42 555	12 130	30 425
Post-secondary teacher/assistant	33 795	15 265	18 535
College instructor	83 080	41 240	41 840
Secondary school teacher	158 395	76 075	82 320
Elementary/kindergarten teacher	218 980	179 035	39 945
Guidance counsellor	12 525	7 445	5 075
School administrator	36 510	11 950	24 560
Health/social science consultant*	29 490	16 620	12 860
Ec. devel./marketing consultant*	26 495	11 695	14 805
Education consultant*	13 035	7 735	5 305
Recreation/sports consultant*	11 115	6 875	4 240
Natural/applied science consultant*	9 045	2 590	6 455
Economist *	5 370	1 420	3 950
Other consultant *	3 660	2 025	1 630
Government-unique consultant *	2 040	800	1 245
Business and finance**	207 460	83 490	123 965
Natural/applied scientist**	347 680	64 260	283 420
Health professional**	374 325	289 635	84 695
Social issues professional**	143 885	62 055	81 830
Arts and culture professional**	143 960	79 270	64 690

(* and **: not usually considered to be educators; * referring to consultants whose work may contain an educational component; ** referring to other professionals whose work may contain an educational component)

Table 2. Potential professional environmental educators in Canada, 1991 according to the 1993 Statistics Canada/Employment and Immigration Canada classification for professional occupations. (Statistics Canada, 1993 a. ,b. ,c.)

In summary, in Canada in 1991, we had a pool of potential professional environmental educators in formal education, consultancies, and other professional occupations of some 1.8 million professionals, of which about 972 thousand (54 percent) were women.

Yet, only a small, and still-unknown fraction of those professionals have become involved in environmental education. So one of the attractions of the professionalization of EE may be to draw these unconverted into the fold. However, EE must be perceived to have some unique advantage, or especially worthwhile contribution, in order for such professionals to leave their existing commitments and support systems.

One such advantage may be the economic potential, discussed earlier, of the environmental industries. Certainly, government and industry representatives have put forward market-rational arguments for the unification and standardization of business-related environmental knowledge and practice. They have argued that such quality control would increase confidence in the credibility and capability of environmental knowledge, streamline the process of finding a sustainable future, and develop a global environmental industry

ERIC
Full Text Provided by ERIC

in which Canada would be competitively-advantaged (Buchholz, Marcus & Post, 1992; Fouillard, 1993; Industry Canada/Environment Canada, 1994; Gass, 1973).

In North America alone, the federal governments of the United States (for example, through the Environmental Protection Agency) and Canada (for example, through Environment Canada and Industry Canada), and the North American Association for Environmental Education, the Canadian Council for Human Resources in the Environment Industry, the Canadian Environment Industries Association, and the National Association of Environmental Professionals have all proposed such control mechanisms. Even the environmental movement seemed in need of better organization (Petulla, 1987; Snow, 1991).

One such mechanism to control the quality of environmental educators is professionalization — that process through which an occupation acquires the traits or attributes of a profession (Buffington, 1974). And, as mentioned earlier, we need to know more about both the process and the product, before we can evaluate any argument about the professionalization of environmental education.

Professions and professionalization: The peculiar case of modern knowledge and trustworthy human capital

As a first step, we need to have a deeper definition of the concept of *profession* than the simple reductionism of the federal government's "occupation which requires university-based training" (Statistics Canada, 1993 c.).

According to the Concise Oxford Dictionary (Allen, 1990), a profession is:

> 1. a vocation or calling, esp. one that involves some branch of advanced learning or science (*the medical profession*). 2. a body of people engaged in a profession. 3. a declaration or avowal . . . (Middle English from Latin *profiteri* to declare publicly).

It is difficult, living in the 1990s in post-industrial and presently-restructuring Canada, to consider the professions objectively. The term is emmeshed in a subterranean web of beliefs and attitudes which make up the everyday common sense, the folk concepts that we, in a knowledge society, hold about risk, social stability and functional expertise. Even our ideas about such things as truth, reason and goodness are products of our way of life. They will, especially if unexamined, continue to support the *status quo* (Cocks, 1989). For example, suppose we believe that scientific truth is superior to personal truth, and that professional reason has precedence over lay reason. Then we can condone a model of professional ethics (paternalism) in which it may be not only morally acceptable, but morally necessary, to lie to someone for their own good (e.g., Ellin, 1982).

I shall, throughout this paper, make reference to the origins and meanings of some of the words that contribute to this web of beliefs and attitudes, to try to uncover such connections. To begin to get an idea of the solidity of the concept of *profession* in everyday discourse, one need go no further than our ascriptions of responsible behaviour.

"How professional!" we are wont to rhapsodize, when colleagues show up on time, work efficiently and effectively, remain unflappable under pressure, keep up with their responsibilities, preserve the confidentiality of organizational information, and, in general, make everyone's jobs easier and more productive by doing their full share. Or, perhaps more frequently, "how unprofessional!" we mutter when they fail to do so. As an indicator of such moral strengths as competence, trustworthiness, supportiveness, benevolence, honesty, diligence, and discretion, *professional* is the only term for a subset of occupations which also doubles as a popular conception of the epitome of the virtuous capitalist worker. In contrast, "how unionist" or "how domestic" fails to evoke that same image of consistent dedication.

In Canada in 1867, only about 1 percent of the total human population was considered to work in a profession (MacDonald, in prep. a.). However, as industrialization entered a phase of mass production, bureaucratic corporations and widespread support of research and development, this percentage began to increase. Changes in health care, public welfare, knowledge organization, primary resource management, urban design, and so on, created a demand for skilled workers, interwoven with a developing sense of national identity (Laxer, 1991; Macdonald, 1991; Zeller, 1987). The number of professions rose, both as older occupations changed their status and as new discoveries opened up opportunities for the birth of new professions (Bohnen, 1975; Witz, 1992). By 1911, 13 percent of the female and 2 percent of the male; and by 1961, 16 percent of the female and 8 percent of the male labour force in Canada were professionals (Bohnen, 1975).

By 1994, 82 out of a total list of 514 occupations were considered by the federal government to be professions. This accounted for some 2.6 million paid workers, representing about 20 percent of the total labour force (or 24 percent of the female and 16 percent of the male labour force). (Statistics Canada, 1993 a., b., c.).

The original professions of law, medicine, the clergy, and education were still considered professions. They had, over the last century and a half, been joined by social workers, engineers, economists, nurses, natural scientists, librarians, pharmacists, editors, and so on. In fact (and as mentioned earlier), the whole concept of *professional* has become such a natural part of our post-industrial society, that the federal government needed only a single criterion — obligatory university-level training — to distinguish professions from all other occupations and societal roles (Statistics Canada, 1993 a., b., c.). Yet, when sociologists first began to study the professions in the early 1900s, that taxonomic task proved much more difficult.

The product: A checklist approach to the professions

The traits (or attributes) approach to research on the professions was most popular from the 1930s to the 1970s (Pavalko, 1988). Central to this research was the assumption that certain occupations exhibited common traits because of their exchange function within a particular structure of society (Cullen, 1978). For professions, that function was the application of complex knowledge to solve vital human problems. It was best fulfilled when the buyer of professional services trusted the seller, and the seller respected both the buyer and the other sellers of those services (Abbott, 1988).

What were the taxonomic traits thought to arise from and promote that function, which separated professions from other occupations and societal roles? In *Professional ethics in education*, Rich (1984), reviewing the sociological literature from the early 1900s onwards, concluded that these were:

- *a high degree of general and systematized knowledge*: variously referred to as esoteric, theoretical, or indeterminate, the chunk of knowledge which is the domain of any given profession is considered to be underlain by some set of universal principles and supporting evidence, the understanding of which is constantly being advanced and extended by research carried out within the profession itself. This knowledge is assumed to be important in solving the problems of some set of vital human activities;
- *a long period of specialized, intellectual training*: in order to become proficient in the practices of this considerable chunk of knowledge, professionals-in-training are obliged to spend many years engaged in advanced learning at universities. In most cases, this training is centred on young adults (late teens to early 30s);
- *a practice which is essentially intellectual in character*: the work of a profession is based on the perception of the world as problematic — composed of problems that are discrete, knowable and capable of solution. The professional's expertise lies in diagnosing, advising and directing, relating the professional body of knowledge to someone's (e.g., buyer, client, patient) particular concerns. Part of the professional's expertise is the recognition of the boundaries to her/his knowledge, and of the appropriate professionals to consult when those boundaries must be crossed;
- *the provision of a unique social service*: since most people are in a state of ignorance of the esoteric body of knowledge of any given profession (including those professionals who are outside their area of expertise), and given that the knowledge is important, there is a substantial component of public service in professional work. Some professions emphasize the importance of scaling the price for their services to promote a more equitable availability of these vital services;
- *the self-regulation of standards of entrance and exclusion*: members of a particular profession form associations. Through these associations they develop preadmission selection criteria, requisite coursework and practica for initial and in-career training, and certification and/or licencing procedures. All of these standards are put, and kept, in place through negotiation with the state. Such standards ensure that only a few (supply control), or only the best (quality control) enter into, and remain in, a profession;
- *the development of an enforceable professional code of ethics*: professional associations establish codes of ethics which act as guidelines for practitioners, and as protections for the general public (to the extent that the professional association has, and is willing to exercise, disciplinary powers over its membership). The need for such codes arises in part because of the gap in power between the professional seller of expertise and the client buyer. This gap may place a (legally enforceable) higher obligation on the professional to be competent, trustworthy and discrete, particularly where the client must reveal usually-confidential aspects of themselves in order to receive the best professional service. The codes also may provide limits to intra- and inter-professional competition, in order to foster the collegiality

necessary for the sharing of new knowledge and the adoption of best practices, and to avoid conflicts of interest. Finally, the codes may, either explicitly or implicitly, prioritize professional responsibilities towards clients, employers, colleagues, and the general public;

- *the exercise of a broad range of autonomy*: both at an individual level (in professional conduct and in the day-to-day scheduling and content of work), and at an associational level (in determining and enforcing the appropriate standards for training and performance), professionals are considered not only capable of self-direction, but obliged to do so. That is, a professional, as an expert trusted to provide the best solution for a client's particular problem, should be independent of her/his own subjective concerns, and of administrative or other interference.

How does all this relate to environmental education and professionalization? To start with, educators, according to Rich (1984), have fewer of the professional traits than do, for example, medical doctors or lawyers. Educators do provide a unique social service (e.g., the socialization of a stratified labour force, and/or of a democratically effective citizenry [Aronowitz & Giroux, 1991; Ball, 1990]), have a practice which is essentially intellectual, and require a long period of specialized training in order to practice (Britzman, 1991). However, in other ways, educators fail to run true to professional type, sometimes even being classified as incomplete or semi-professionals (e.g., Etzioni, 1969; Sokoloff, 1992).

The dubious taxonomic position of educators results from a number of factors, chief amongst which is lack of autonomy (Rich, 1984). That is, as a group, they are perceived to be under the control of non-educators, and to be dependent, to a large extent, on factors other than the educational in the determination of their work. It is important, however, to remember, throughout this discussion of autonomy, that a number of critics of the professions regard the claims for its attainment as overstated, if not mythic (e.g., Anderson, 1992; Carlson, 1988; Kultgen, 1982, 1988; Nitzen & Tzur, 1989; Osiel, 1984; Rueshemeyer, 1983).

As Pritchard (1991) argued, autonomy is related to the concept of moral competence. It requires:

- *impartiality in reviewing and justifying moral principles* (i.e., a detachment from particular likes, dislikes, biases and commitments in order to reasonably determine universally applicable moral guidelines; but guidelines which can include the good of particular relationships);
- *the right to decide for oneself* (i.e., whatever range of choices, the moral agent is capable of choosing responsibly as an individual, but can do so in communication with others, and in a context of interdependence);
- *self-governance* (i.e., living one's life in ways consistent with maintaining personal integrity, with having an awareness of the sentiments that move them, and an internal consistency that integrates all of one's important decisions as much as possible. (Pritchard, 1991, pp. 185, 186)

That first sense of autonomy is more or less what is deemed necessary for, and characteristic of, not just professional but ordinary human moral maturity. It is part of an internal schema, developed through experience with the ways in which any given society poses and solves moral dilemmas (Callahan, 1988; Christensen, 1984; Crittenden, 1990; Garner, 1994; MacNiven, 1990; Rest & Narvaez, 1994; Simon, 1994). Thus, professional codes of ethics could be considered as guidelines based on experientially and reasonably determined universals peculiar to the particular relationships between experts and ignorant people, whether affected by the exchange of some consideration (e.g., consultancy fees, tax-supported education) or not. The test to evaluate those moral guidelines — whether utilitarian, deontological, relational or something else — for the balance between substance and public relations, between altruism and self-interest, remains to be developed (Harding, 1985; McDowell, 1972).

The second and third senses of the term are more ambiguous, combining both individual development and context. Thus, the right to decide for oneself includes both the internal capability to make responsible decisions, and the external freedom to act on that decision and to bear its consequences. Similarly, self-governance requires an internal commitment to the development of comprehensive and coherent moral competency, as well as the external freedom to experiment, and to learn from both the successes and failures of oneself and others.

For knowledge societies, the context of autonomy is most often measured in the workplace, and separated from the domestic or private. One's work situation is considered central to the development of a public or social morality, to the creation of a framework to explain obligations beyond the self and family (Wueste, 1994). This conceptualization seems to picture the workplace as the jungle-gym of the soul, where moral dilemmas abound, providing complex learning opportunities on all manners of hard, role-related choices. It is this workplace context which, for the educator, contributes most to a lack of professional autonomy.

The more an educator acts as an employee rather than a consultant, the more limited is her/his autonomy. That is, an employee would expect to have a fully-functional workplace provided, to be given direction on the work to be done, to be monitored on a day-to-day basis for satisfactory performance, and to carry out her/his work in accordance with a relatively firmly-defined job description. A consultant would determine the work to be done, carry it out to a standard considered adequate by her/his peers, and be evaluated in relation to the delivery of a particular good or service, such as a report or training workshop. So, for example, a consultant who designs in-service training programs for businesses would be considered to have more autonomy than someone who must teach from school-board-controlled lesson plans.

For the profession as a whole, the most visible educators are those embedded within the bureaucratic system of public schools and post-secondary institutions (as discussed in the preceding section). Thus, even though the majority of professionals engaged in environmental education may be outside of that system (as we discussed in the preceding section), the common sense understanding of the environmental educator will be of some heteronomous worker, potentially prevented by bureaucratic constraints and parental pressure from providing the best and fullest professional service. This understanding may limit the success of environmental education.

Given the explicit importance of moral maturity as a goal of environmental education, and given its commitment to the transformation of society into the New Environmental Paradigm and a new understanding of the nature of the good, then professional autonomy is of particular importance to the success of EE. That is, effective environmental educators would have to be skilled in the resolution of moral dilemmas — in determining their nature, in outlining and assessing the alternatives, in choosing the best course, and, while recognizing the relativism beneath that decision, in taking appropriate action. In addition, they would have to be skilled in the teaching of moral understanding — in knowing and taking into account the developmental, structural, contextual and practical implications of both moral argumentation and moral sensitivity in relation to the particular cases of their students. Finally, they would have to be in a position of sufficient freedom from bureaucratic, administrative or other control to examine each particular educative case of DSP malaise, to diagnose the symptoms and to recommend/provide the cures, and to follow up on the implemented educational experience, to ensure its efficacity. Moreover, they would have to be in a position to bear the consequences of their actions of negligence, malfeasance, and supererogation in regards to those three aspects of environmental educators' moral maturity (Harding, 1985; Brockett, 1988; Martin & Schinzinger, 1989).

As Rich (1994), Tight (1988) and others have argued, the struggle for educational autonomy coalesced around the concept of academic freedom:

> . . . the liberty needed to investigate, publish, and communicate knowledge in an academic community without administrative, political, ecclesiastical, and other forms of interference . . . . Academic freedom is needed in the search for truth, both in teaching and research, not only on "safe" topics but on those whose outcomes are likely to stir widespread controversy . . . . [It] refers to five distinct privileges: classroom autonomy for the teacher, freedom of inquiry for the scholar, extramural freedom for the staff members, tenure protection for the qualified, and academic due process for the accused. (pp. 56,57)

Thus, for university professors, autonomy was tightly linked to competence in research rather than in teaching, at least in part because research (and research funding) was a better defence for self-regulation and against outside and non-expert interference. The pursuit of that autonomy may have reinforced a division between post-secondary and other education (Weaver, 1991). In addition, for public school teachers, academic freedom was limited by the legal minority of the students, even if educators were purportedly *in loco parentis* (Rich, 1994).

This emphasis on research over teaching, and on the conflation of newly-discovered knowledge with merit and competence, has created a paradoxical situation for educators. That is, educators do not have a unified chunk of general and systematised knowledge upon which they agree, or for which they have a consistent practice. Many educators are members of two professions (i.e., education and a "home" discipline such as law, accounting or biology), and have two bodies of general and systematized knowledge with which to contend. Often, educators who are at the leading edge of their "home" profession (e.g., professors as researchers at university) have little to no formal training in, and receive few academic rewards for research on or publication in, pedagogy and androgogy (Weaver, 1986).

Thus, an ecologist researching the bioenergetics of tidal marshes is expected to know about energy flow. S/he is often not aware of the "universal principles and underlying evidence" of adult education (e.g., Cross, 1988) when teaching a fourth year biology course, or presenting an Environmental Impact Assessment to a provincial review board. Taking Weaver's (1991) analysis into consideration, one might even expect resistance on the part of the ecologist to being considered a teacher, since such a designation could lead to less autonomy and academic freedom.

Within this *melange* of institutional context, client needs, professional diversity, and disputed domains of knowledge, educators have had difficulty in establishing effective and consistent codes of ethics. As Rich (1994) noted, this difficulty is fundamental:

> Is the teacher's central ethical obligation to the individual student, the class as a whole, or to school board policies? . . . Is the professor's central ethical obligation to his or her discipline, to students, or to the employing institution? (p. 47)

The universality of such principles as academic freedom, informed consent, and confidentiality is limited by such divided loyalty. Also, it should be noted that Rich (1994), like most other researchers concerned with the education profession, failed to include those educators who function outside of the public system (e.g., within corporations). Their ethical concerns would add yet more diversity to any overarching professional code. Given the current trends toward the privatization of education, these concerns may merit greater attention in the future.

Finally, environmental educators, with an obligation beyond the human species, would have even greater difficulty in the establishment of a code of ethics. Such a code would have to maintain both the fiduciary relationship expected between a professional and her/his client, and a congruency between professional practice and the universal principles flowing from the interdisciplinary EE body of knowledge. Professional dilemmas — whistle blowing versus trustworthiness, *pro bono* volunteering versus collegial responsibility, high-technology heroics versus low-technology empowerment, having a life outside of work versus dedication, being clear about what is known and not known versus taking care of distraught clients — would all become more complex in a world where oak trees had rights, or where humans annually acknow-ledged in public a kinship list of beings whom they had used and/or helped.

What that all boils down to is that educators, in attempting to be considered more professional, would be likely to focus on autonomy as a desired end. And, if that is the case, then they would probably turn to professional exemplars, such as medicine and the law, as models for the achievement of that workplace autonomy. Assuming that the earlier-discussed attributes are sufficient and necessary, then the following changes could make environ-mental education truly professional:

1. *a unified body of general and systematized knowledge*: given the core goals of environmental education, this body of knowledge would have to interweave foundational concepts of ecology, scientific theories about decision-making (including moral issues), and the principles of pedagogy and androgogy (all within a cross-cultural perspective). Only people with the right training (see 2. below) could contribute to the growth of this body of knowledge. Unidisciplinary professionals could not use this body of knowledge directly, but could refer their clients to the appropriate source. This system of referral could be based on existing professional models. Environmental educators, as professionals, would be responsible for the interpretation, verification and control of folk or common environmental knowledges (where "folk or common" would apply to anything not professional);
2. *a long period of specialized training, with certification and licensing*: professional schools would have to be created at the university level, to provide environmental education through some combination of cross-departmental, cross-faculty and new appointments. These academics would be responsible for the teaching and research needed to develop and transmit the EE body of knowledge (see 1. above). In keeping with academic standards, university environmental educators would require four degrees (baccalaureate in combined science/arts; baccalaureate in education; masters; and doctorate). The evaluation of their performance would be based on a combination of scholarly productivity (80 percent), teaching (10 percent), and community service (10 percent), in keeping with the implicit practices of existing professional schools.

For work outside the university, environmental educators would require only the first two degrees. In all cases, association-determined certifications (both general and specialist), and provincial, federal and international licensing (based on successful completion of a period of practical experience and international examinations) would be required. These would be developed and administered by the

Association of Environmental Educators (see 4. below). Only people with this specialized training would be allowed to practice environmental education. They could not facilitate the development of environmental knowledge competencies outside of the profession (see 4. below);

3. *clarification of the unique social service, particularly its intellectual practice*: environmental education is aimed at the establishment of a holistic and sustainable relationship between humanity and the biosphere. To truly provide that unique service, environmental educators would have to reach agreement on the prerequisites for sustainability, and the framework within which such prerequisites could be achieved. Such a framework would have to take into account the paramount importance of the fiduciary relationship between the professional and her/his client (see 4. below). Because the service is unique and vital, and given the economic disparity amongst people, some allowance would have to be made to ensure equitable availability (e.g. streetfront clinics, *pro bono* cases, environmental aid). The practice of existing professions in this regard could be used for reference;
4. *control of standards of entrance and exclusion, enforcement of a code of ethics, and verification of the necessary level of autonomy*: a global Association of Environmental Educators, through state- and internationally-supported profes-sional schools, and a system of licensing and certification (see 2. above), would be responsible for the surveillance of professionals and other people. Such surveillance would confirm that only EE professionals were practicing environmental education, and that people (both corporate and otherwise) were consulting EE professionals for expert advice on the environmental consequences of everyday life. A single code of ethics would be required to clearly prioritize amongst EE professional responsi-bilities to clients, colleagues, employers, family, human interest groups, and other species. This code of ethics would be in sufficient detail to apply to the full variety of EE contexts, and to offer substantive guidance, especially in relation to the maintenance of autonomy. Mechanisms of enforcement, including censure, decertification, awards for achievement, and economic retaliation would be applied appropriately through a Review Board established by the Association.

Now that we have a clearer idea of the attributes of a truly professional environmental educator, we can return to the question of whether environmental education would survive such professionalization.

The process: Professions and the power of exclusive knowledge

So far, we have seen that environmental education, in its fullest sense, is an interactive combination of the natural and social sciences, and of formal and non-formal educational institutions, focussed equally on moral, affective, aesthetic and cognitive development, all framed within the context of sustainability. However, we have also seen that most of the goals of such a transformative education have yet to be achieved. Although many humans are now worried about the state of their surroundings, we have yet to be moved to consistent and effective action, to replace the present Dominant/ Human Exemptionalist/Western Worldview with some New Environmental/Ecological Paradigm.

We have touched briefly on the diversity of efforts in environmental education, from grassroots, through public school, university, and industry, to international government. We also have some idea of the huge potential number of professional environmental educators — in Canada alone, some 1.8 million professionals (over half of whom are women) — who have differing, and sometimes opposing, knowledge bases and loyalties. We can only estimate the equally huge potential number of not-professionals — the 3.3 million or more volunteers and activists (over half of whom are women) who are concerned about environmental protection, and who engage in education of themselves and others as part of that protection. And we also have some idea of how that diversity and those potentials act as stimuli for a call to professionalize environmental education, even though many such educators are professionals already.

That is, we have evidence for a strong demand (for example, the creation, and forecast economic growth, of the Environmental Industries sector). We also have evidence of the continued marginalization of environmental education (for example, the Environmental Education Index discussed earlier, or the large number of professionals who identify as neither environmental professionals nor educators). Therefore, it may seem that we environmental professionals/educators must be doing something wrong, missing some opportunity for change.

The final questions to consider, in trying to evaluate whether environmental education will survive professionalization, have to do with context. That is, if a group of environmental educators in Canada in the 1990s were to attempt to professionalize, what barriers would they have to surmount? Who would become the charlatans and quacks whose empty babbling would serve by contrast to justify their professionalism? Could they achieve an autonomy comparable to that of medicine and law? Could their new-won professional autonomy coexist with an educational imperative to promote in oneself and others the moral maturity to live sustainably?

The actual process of professionalization is a complex one. It depends not only on the desires of the workers in an occupation to be perceived as professionals, but on the social context in which that particular occupation is located (Figure 1).

For instance, we have already considered the trait of professional knowledge — that it be a definable body of knowledge accepted by professional and laity alike as esoteric, indeterminate, complex and essential. We touched briefly on some of the difficulties encountered in trying to bring together both knowledge and people from a numberof different disciplines. That is, environmental educators have not only to convince each other and the general public that they (or we) have a coherent, definable, and unique body of professional knowledge. They also have to convince professionals from other disciplines of the same thing, and do so in such a way that "green" professionals will join EE, moving away from their original professions, and that those professions will tolerate (at worst) or support (at best) such defection.

However, as Figure 1's model of professionalization shows, such peaceful poaching seems unlikely. Abbott (1988) argued that the professionalization of any one occupation does not occur in isolation, but rather within the context of a system of professionals. In Canada, by the 1990s, that system consisted of over eighty professions, from the old and powerful (e.g., medicine, law) to the new and marginal (e.g., social work and librarianship), with various permutations and combinations in between. In this system of professions, each profession has, and is, engaged in an ongoing struggle for existence with every other profession, and the scarce resource of knowledge has been divided up into discrete territories:

> By focussing on parallels in organizational development, students of the professions lost sight of a fundamental fact of professional life — inter-professional competition....
>
> The professions, that is, make up an interdependent system. In this system, each profession has its activities under various kinds of jurisdiction. Sometimes it has full control, sometimes control subordinate to another group. Jurisdictional boundaries are perpetually in dispute, both in local practice and in national claims... Thus an effective historical sociology of professions... must place these disputes in a larger context, considering the system of professions as a whole. (Abbott, 1988; pp. 1, 2)

For Canada in the 1990s, that professional system is already under a number of challenges (Menzies, 1996; Spender, 1996), including:

- *the disappearance of protected niches*: as government spending declines on health, education, research/development, monitoring/enforcement and other parts of the social safety net, the percentage of the population that can be supported as true professionals should also decline, unless private spending can compensate. In addition, globalization of trade will, through the mobility of production, bring into contact systems of professionals which had previously operated in relative isolation, and which must now engage in the process of establishing a new and global system of competitive equilibrium;
- *the proletarianization of professional skills and knowledge*: the advances being made in information technologies are likely to make professional knowledge available to anyone with access to a personal computer, a modem, and the remote sensing devices necessary to the communication between client and computer. From virtual field trips to virtual classrooms, professionals will be engaged in a defence of their knowledge base both externally (e.g., empowerment of the laity, and swamping by other economies' mass production and marketing) and internally (e.g., resistance to long periods of training and specialization, challenges from supporting occupations which wish to upgrade their status);
- *the carrying capacity of Earth for human societies*: the success of professions is intimately linked to economic growth. Yet most of the evidence that is the basis of the environmental professions suggests that we have reached, if not passed, the limits to such growth. If professions are an integral part of a capitalist system, if the chief reason for becoming a professional is economic reward, if the capitalism of the DSP cannot be changed into a form appropriate to the NEP, then the very concept of profession is unstabilized by our approach to the limits of growth.

BEST COPY AVAILABLE

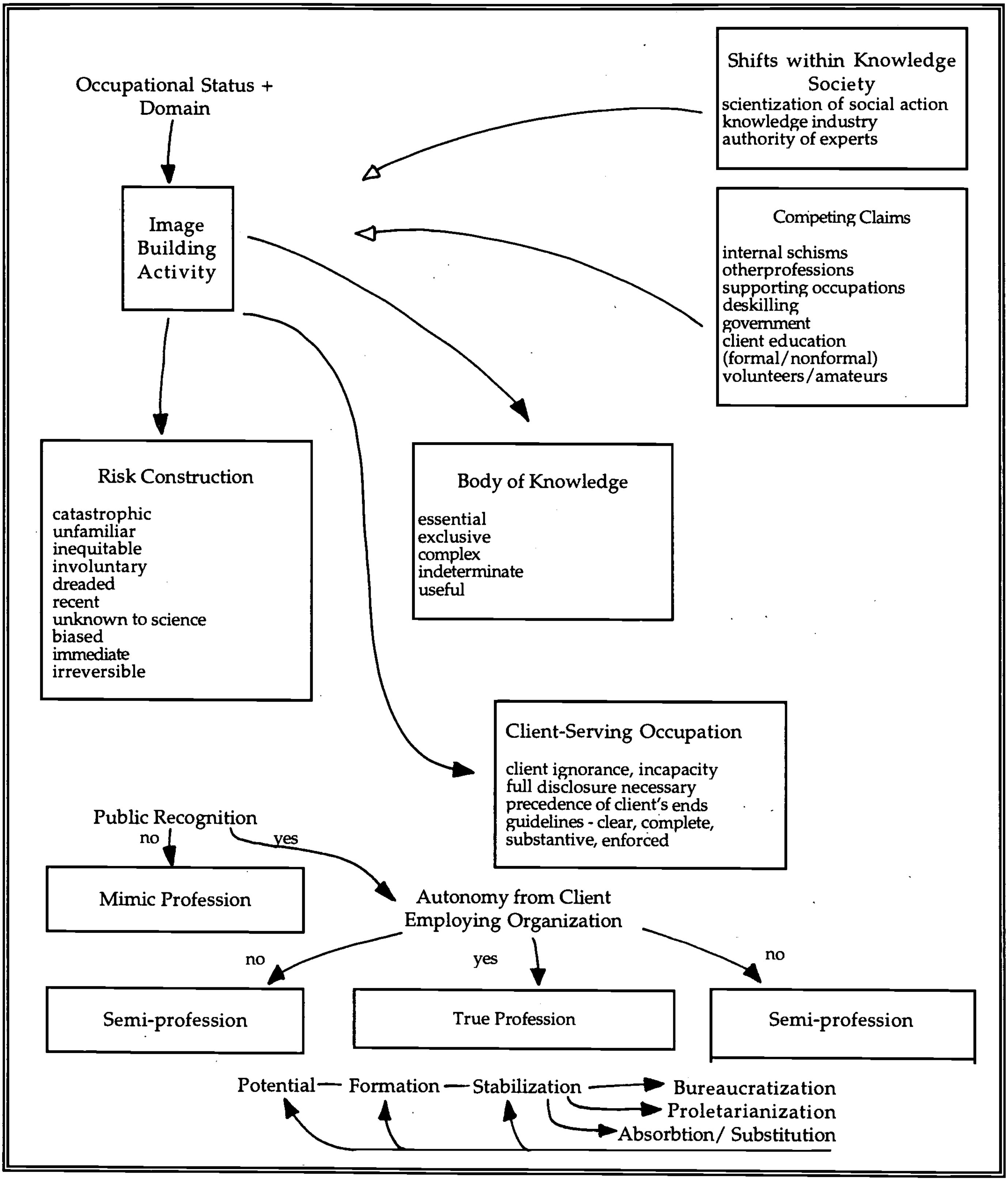

Occupational Status + Domain
Shifts within Knowledge Society
scientization of social action
knowledge industry
authority of experts
Image Building Activity
Competing Claims
internal schisms
otherprofessions
supporting occupations
deskilling
government
client education (formal/nonformal)
volunteers/amateurs
Risk Construction
catastrophic
unfamiliar
inequitable
involuntary
dreaded
recent
unknown to science
biased
immediate
irreversible
Body of Knowledge
essential
exclusive
complex
indeterminate
useful
Client-Serving Occupation
client ignorance, incapacity
full disclosure necessary
precedence of client's ends
guidelines - clear, complete, substantive, enforced
Public Recognition
no
yes
Mimic Profession
Autonomy from Client Employing Organization
no
yes
no
Semi-profession
True Profession
Semi-profession
Potential
Formation
Stabilization
Bureaucratization
Proletarianization
Absorbtion/ Substitution

Figure 1. A model of professionalization (modified from Forsyth & Danisiewicz, 1985, adding concepts from knowledge societies [Stehr, 1994], risk construction [Covello & Johnson, 1987], deprofessionalization [Derber, 1992; Torstendahl & Burrage, 1990] and system of professionals [Abbott, 1988]).

BEST COPY AVAILABLE

Given these stresses to the professional system, the birth and nurturing of an environmental meta-profession becomes questionable.

For Abbott (1988), the system of professionals depends upon the creation and application of knowledge. The professions (having corporate identity and legal being) cooperate as equals (e.g., statisticians developing new analytical tools for social workers to track educational outcomes for elementary school children); form hierarchical alliances (e.g., nurses and medical doctors); and compete for vacant jurisdictional space (e.g., medical doctors, architects and civil engineers for public health and urban planning, following the invention of clay piping in the early 1800s).

As Abbott envisaged it, new professions could arise only at the expense of the existing ones, but those existing ones had found and maintained their niche within the professional system precisely because they were competitive. Thus, this competitive system kept, and keeps, a constant pressure on each of its component occupations to defend jurisdictional boundaries. Over the last two hundred years, and especially since the early 1900s (marked by a proliferation of the professions), and the 1960s and 1970s (marked by state and other reviews of the authority and regulation of professions), these component professions have elaborated a set of guidelines for coexistence. Like Darwin's finches, whose differing bill sizes preclude an interspecific scramble for food, it is the apparent absence of direct competition amongst professionals that is supposed to be the best evidence for its tacit presence.

Abbott (1983) suggested that professional codes of ethics provide clues to the hidden dynamics of professionalization by what is omitted as well as by what is included, and, in the latter, by what is intended to be taken seriously as well as by what is mere puffery or preamble. For example, he noted that such codes are intended to regulate the performance of individual professionals, rather than that of the aggregate for the profession, even though both are measurable. Further, the greater the movement towards individualism and autonomy in any profession, the lower the status within that profession of those practitioners whose specialty is oriented towards a public duty (e.g., public health in medicine, community mental health in psychiatry, public defenders in law).

For environmental educators intent on the attainment of sufficient workplace autonomy to shift their occupational status from weak or semi-profession to true profession, this regulation of individual educators may seem attractive. Already divided amongst themselves in a number of different ways, such educators (and environmental professionals in general) might propose a code of ethics which ensured cooperation amongst normally disparate occupations and disciplines.

That is, the more autonomy achieved in self-governance and the right to decide for oneself about the content and scheduling of the educational experience, the more necessary a strong code of ethics might seem. Such strength would lie in clauses aimed at the regulation of specific individual practices. These clauses would serve to reassure both clients (i.e., that the quality of the product of a diverse profession was under control), and workers in other professions and related occupations (i.e., that the competitive behaviours of what would amount to a meta-profession were under control). However, one might expect, as an accompaniment to this somewhat paradoxical rise in autonomy and control of the individual, a decline in the orientation in environmental education towards public duty.

As evidence of competitive displacement amongst the professions, Abbott (1983, 1988) referred to those clauses which deal with interprofessional relationships — the agreement to recognize and stay within one's own area of competency, and to refer one's client to other professionals as required. For example, in the code of ethics of the National Association of Environmental Professionals, one finds the promise to:

> 4. conduct my analysis, planning, design, and review activities primarily in subject areas for which I am qualified and encourage and recognize the participation of other professionals in interdisciplinary teams wherever practical to determine impacts, define and evaluate all reasonable alternatives to proposed actions, and assess short-term versus long-term productivity with and without the project or action.
>
> 5. seek common, adequate, and sound technical grounds for communication with and respect for the contributions of other professionals in developing and reviewing policies, plans, activities, and projects. (Lemons, 1995; Code of Ethics and Standards of Practice for Environmental Professionals; fourth page, unnumbered)

As in other codes of ethics (Gorlin, 1990), such clauses are directed at the maintenance of the professional system. No other occupations except professions are considered worthy of such referral. Except for the general exercise of reasonable care in respect to bystanders, no ethical obligations exist to honour knowledges other than the professional, or to provide professional information to those unable to be clients — for example, poor humans, or as Stone (1987) suggested, trees, sacred places and other beings.

Similarly, the avoidance of conflicts of interest, fraud, misrepresentation, and intraprofessional competition generally merit more space in professional codes of ethics than do concerns for the protection of anyone, human or otherwise, outside of the clients-professions matrix of interrelationships (Bennion, 1969; Gorlin, 1990; Pellegrino et al, 1991). For example, the Code of Ethics of the National Association of Environmental Professionals has seven clauses (clauses 3 to 6, *Ethics*; 6, *Guidance for practice*; and 3 and 4, *Encourage development of the profession*) that deal with the former, and a general introductory clause and *Creed* that represent the latter:

> It is [an environmental professional's] duty to interest themselves in public welfare and to be ready to apply their special knowledge for the benefit of mankind [sic] and their environment ...
>
> 1. to recognize and attempt to reconcile societal and individual human needs with the responsibility for physical, natural, and cultural systems.
>
> 2. to promote and develop policies, plans, activities, and projects that achieve complementary and mutual support between natural and man-made [sic], and present and future components of the physical, natural, and cultural environment.

I do not argue here that the Code of Ethics of the National Association of Environmental Professionals is either reprehensible or misguided. Rather I would conclude that any occupation which is being fitted into the mold of *profession* must adopt the limitations and responsibilities of that particular social role, and that, whatever the good intentions of its practioners to promote social change, the fiduciary relationship between client and professional, and the collegial relationships within and between professionals are paramount, in this society and at this time.

In Figure 2, there is a representation of what Abbott's system of professionals would look like for Canada in 1991. Educators are central to this system, being responsible for the production of the highly-trained people that engage in all professional practice, and for much of the new knowledge that is the lifeblood of that system.

However, as Figure 2 illustrates, Abbott's (1988) system of professionals is incomplete. First, he gave little to no attention to the interactions of professional occupations both upwards and downwards within the stratified labour force. That is, workers in professional occupations are also engaged in contests with those occupations which support the professions (e.g., technicians) over definitions of the nature, content and control of that supporting work. At the same time, professionals, either employed in bureaucracies or under contract to them, interact with management in relation to work performance and autonomy. For Canada, some idea of the size and composition of these two layers is given in Figure 3.

Second, Abbott (1988) did not include in the system of professionals those people outside the labour force (e.g., volunteers, activists, family members) who nonetheless are affected by, and to a large extent maintain, that system. I will return to this point later in this discussion.

When we talk about the benefits and costs of the professionalization of environmental education, then, we need to bear in mind the ramifications that such an occupational change will have both within the system of professions directly, and within the workforce layers above and below. For example, if we are designing a workshop on "green consumerism," in what ways would we acknowledge and incorporate the lived realities of sales clerks employed at or below the poverty line who sell products that they consider to be environmentally offensive? In what ways do we acknowledge and incorporate the limits to professional expertise to alter management decision-making? For example, whistle-blowing is an ongoing ethical dilemma. As currently depicted, it is justifiable only after one has first-hand and verified evidence which has been brought to all the appropriate levels within the client's or employer's organization but which has been ignored; and furthermore, it must be clear that the practices are harmful and that the whistle-blowing will be effective in halting that harm (Bok, 1980). If whistle-blowing is a difficult concept for society to live with, what would the reaction be to educational workshops which demonstrated that a company or branch of the government was so environmentally destructive that it would be in its own best interests to cease operations?

In summary to this point, the professionalization of environmental education would need to be understood as a process considered worthy of support first, by a core group of educators; second, by the system of professionals within which the newly conceived profession would be embedded (and probably as a subset of a larger group of environmental professionals who would be engaged in their own interactions to form a profession within that system); third, by the support and management system which in turn surrounds that system of professionals; and fourth, by the people peripheral to these systems (the unpaid). Environmental activists and volunteers, as discussed earlier, can be considered to occupy a somewhat anomalous position within this organization, being both at the core (as educators) and the periphery (as an unpaid and willful force unregulated by either state or market).

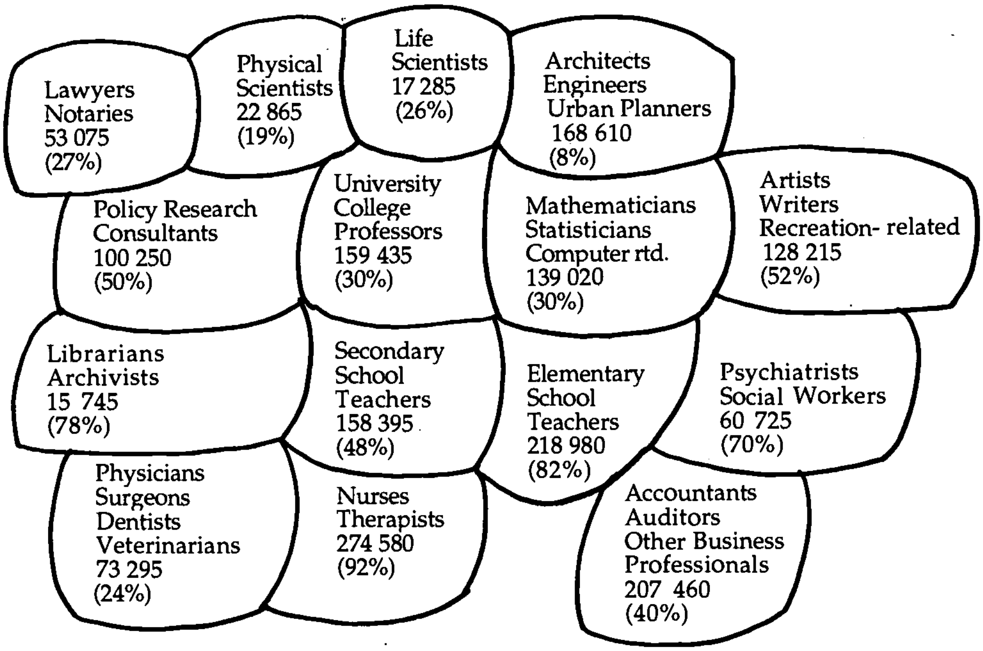

Lawyers
Notaries
53 075
(27%)
Physical
Scientists
22 865
(19%)
Life
Scientists
17 285
(26%)
Architects
Engineers
Urban Planners
168 610
(8%)
Policy Research
Consultants
100 250
(50%)
University
College
Professors
159 435
(30%)
Mathematicians
Statisticians
Computer rtd.
139 020
(30%)
Artists
Writers
Recreation- related
128 215
(52%)
Librarians
Archivists
15 745
(78%)
Secondary
School
Teachers
158 395
(48%)
Elementary
School
Teachers
218 980
(82%)
Psychiatrists
Social Workers
60 725
(70%)
Physicians
Surgeons
Dentists
Veterinarians
73 295
(24%)
Nurses
Therapists
274 580
(92%)
Accountants
Auditors
Other Business
Professionals
207 460
(40%)

Figure 2. The system of professionals in Canada. Total number of workers and percentage of women workers are shown for each category. Following Marshall (1989), occupations are considered to be male-dominated where the percentage of female workers falls below that in the total labour force (e.g., 45% for 1991). (Based on Statistics Canada, 1993 a., b., c.)

It is here that we need to consider the implications of risk construction in the strategies of professionalization (Figure 1). From client conceptions of acceptable risk, to professional communication of the safety or danger of alternative procedures, to a societal willingness to regulate and monitor particular hazards, the riskier something is to a vital human concern (like health, justice or immortality), and the greater the expertise needed to handle that risk, the stronger the case for professional status (Douglas, 1985; Slayton, 1977). This may be particularly applicable to the identification of environmental problems and solutions (Douglas & Wildavsky, 1982; Dunlap & Mertig, 1992; Hird, 1994; Petulla, 1987; Szasz, 1995).

Environmental educators seeking greater professional autonomy would most usefully construct a vision of the environment as controllably dangerous. The more risk-filled and problematic our relationship with our surroundings appears, the more essential it becomes to have an intermediary who promises to be able to help. There must always be something to cure through expertise, rather than to prevent through common sense. There must always be someone or something to monitor, in order to diagnose sickness.

According to Seidman, for knowledge societies such as Canada in the 1990s, social order in relation to such risks is maintained:

> ... through technologies of control such as spatial separation, time management, confinement, surveillance, and a system of examinations that classify and rank individuals for the purpose of normalizing social behaviour . . . . Power in [such] a disciplinary order is manifested less in the form of repression than in the production of subjects or social selves who are positioned as objects of normalizing control . . . . These technologies of control are interlaced with medical-scientific discourses; the latter control the movement of bodies, desires, identities, and behaviours by contributing to their very formation and by imposing on them normalizing rules or norms. (1994; pp. 226, 227)

So, we return to the checklist of traits that define a professional, to reconsider some of the changes, modelled on such exemplars as medicine and the law, which I had suggested to enable environmental educators to become true professionals. It seems all too likely that those changes would lead to an environmental education conservative rather than transformative of such disciplinary order.

BEST COPY AVAILABLE

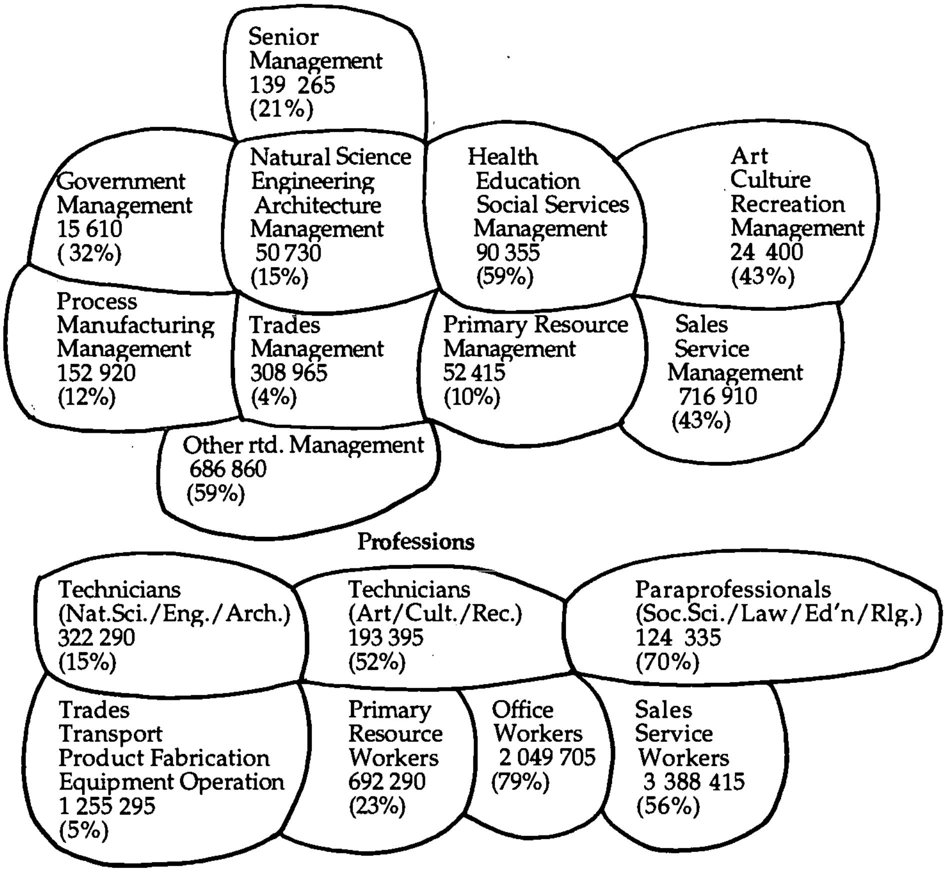

Senior Management 139 265 (21%)
Government Management 15 610 (32%)
Natural Science Engineering Architecture Management 50 730 (15%)
Health Education Social Services Management 90 355 (59%)
Art Culture Recreation Management 24 400 (43%)
Process Manufacturing Management 152 920 (12%)
Trades Management 308 965 (4%)
Primary Resource Management 52 415 (10%)
Sales Service Management 716 910 (43%)
Other rtd. Management 686 860 (59%)
Professions
Technicians (Nat.Sci./Eng./Arch.) 322 290 (15%)
Technicians (Art/Cult./Rec.) 193 395 (52%)
Paraprofessionals (Soc.Sci./Law/Ed'n/Rlg.) 124 335 (70%)
Trades Transport Product Fabrication Equipment Operation 1 255 295 (5%)
Primary Resource Workers 692 290 (23%)
Office Workers 2 049 705 (79%)
Sales Service Workers 3 388 415 (56%)

Figure 3. The workforce support and control of the system of professionals in Canada. Total numbers of workers and percentage of women workers are shown for each category. Following Marshall (1989), occupations are considered to be male-dominated where the percentage of female workers falls below that in the total labour force (e.g., 45% for 1991). (Based on Statistics Canada, 1993 a., b., c.)

Appropriation of nonprofessional environmental knowledges, exclusion of amateurs and volunteers, elitism through an increasingly inaccessible university training, problematization of the everyday world of our surroundings, and globalization of a Western science-based ideal of environmental epistemology and of the universals of moral maturity — all of these have precursors in other professions, and all of them may be avoidable.

Thus, one of the stated aims of *The Environmental Professional*, the official journal of the National Association of Environmental Professionals, is to foster interdisciplinarity, but only of a limited sort. Focussed on "developing imaginative approaches to the resolution of environmental problems," the editors of the journal requested articles which:

> go beyond a laboratory analysis, a field experiment, or a theoretical derivation . . . linking scientific, technologic, and socioeconomic systems to effective impact assessment, regulation, and environmental protection . . . at the interface of environmental science, technology, education, economics, sociology, administration, management, planning, law, and policy. (Vol. 17 (3); Aims and scope of the journal, second page, unnumbered)

Such a limited interdisciplinarity, focussed on assumptions about neutrality, objectivity and universality in the natural and applied sciences (but see, for instance, Harding & Hintikka, 1983; Longino, 1990; Shepherd, 1993) is reflected in the Code of Ethics and Standards of Practice for Environmental Professionals (Vol. 17 (3); fourth page, unnumbered):

> As an Environmental Professional, I will:
>
> 1. be personally responsible for the validity of all data collected, analyses performed, or plans developed by me or under my direction ...
> 2. encourage research, planning, design, management, and review of activities in a scientifically and technically objective manner. I will incorporate the best principles of the environmental sciences for the mitigation of environmental harm and enhancement of environmental quality.

According to Bowler (1992) environmental sciences include/d geography, geology, botany, zoology, ecology, physics, and meteorology. Thus, the interdisciplinarity that was to include the social and natural sciences, the humanities, the arts and other areas of human endeavour has become considerably narrowed. Just as professionalization seemed to contribute to the hierarchical division of the labour and non-labour force, so it also seems to limit the EE goal of a broad interdisciplinarity.

Again, I do not intend to criticize the National Association of Environmental Professionals for attempting the admittedly difficult task of fostering the level of interdisciplinarity which they do. The development of collegiality amongst natural and social scientists, business and government managers, and educators can be an important first step towards the EE goal of wider interdisciplinarity, to the empowerment of marginalized environmental decision-makers as discussed in *Agenda 21* (1992 United Nations Conference on Environment and Development), to the transformation of worldviews from the Dominant Social to the New Ecological Paradigm. But it can be an important first step only if it is perceived as such.

Thus, at the same time that we are devising methodologies to combine botanical, geological, sociological and legal information together within the time constraints dictated by particular projects, we need to question a model of science (and hence of technology) as rational, dispassionate, inevitable, neutral and competitive. Perhaps we need to develop a model of explanacy or creativity instead, which emphasizes the productive interaction between rational and intuitive, passionate and dispassionate, chaos and determinism, relationship and detachment, competition and cooperation (MacDonald, 1993).

As Smith (1987) proposed in *The everyday world as problematic*, and expanded upon (1993) in *Texts, facts, and femininity* in relation to authority and communication, professionals such as sociologists must develop practices that promote equity, and provide research for the marginalized rather than about them.

Certainly, if the success of sustainability is as dependent as it was concluded to be in *Agenda 21* on the recognition of, and reliance upon, women, youth, indigenous peoples, non-governmental organizations and trade unions as environmental decision-makers, then past professional practices towards these groups need to change (Bolaria & Bolaria, 1994; Code, 1991; Gaskell & McLaren, 1987; Grimwood & Popplestone, 1993; Harding, 1993; Kinnear, 1995; Noble, 1992; Pearson & Fechter, 1994; Rogers, 1993; Rossiter, 1982, 1995; Schiebinger, 1989; Shortt, 1992; Sokoloff, 1992; Ursel, 1992).

That this professionalization of environmental education might be a mixed blessing is also foreshadowed by the ambivalence which many people feel towards the professions in general. As Millard (1992) pointed out:

> Until recently, professionals enjoyed high status in Canada. Wise, learned and compassionate doctors, lawyers and clergymen were regarded as the embodiment of moral probity and social responsibility. Armed with esoteric knowledge, they battled disease, crime and sin for an ever admiring and deferential laity. Benign and apolitical, they were an incorruptible force dedicated to public service, progress and social order.
>
> Although admired for their altruism, in the last few decades the professions have fallen in public esteem . . . . critics see [them] as monopolistic barriers to individuals and ideas . . . [they] entrench privileged elites, restrict competition, raise fees — even shield incompetence. (p. 3)

How can one subset of occupations be perceived so differently? Although Millard constructed the "good professional-bad professional" dichotomy as chronologically (i.e., historic versus recent) and cognitively (i.e., general society versus critics) disjunct, the reality is far more complex. This dualistic split in our concept of profession is all too similar to what feminist analysts have called the "pedestal-gutter" syndrome in relation to the status of women. That is, just as the social construction of women as either the reliable, chaste madonna or the fickle, wanton prostitute had more to do with power distributions between and within the genders than with the real natures of women (Mackie, 1991), so it may be with professions.

Perhaps we need to understand not just the meanings of *professional* and *not-professional*, but also the human longing for the world to be arranged in sets of such simple dichotomies (Schleifer, Davis & Mergler, 1992). Certainly, our conceptual landscape is littered with such pairings — man/woman, masculine/feminine, culture/nature, day/night, reason/emotion, centre/margin, life/death, certainty/risk, and on and on. Perhaps we also need to understand the politics (in the sense of relationships of power) of dichotomization — why do concepts often acquire meaning only by difference, by opposition and separation? How do we take into account the dialectic, the overlap, the dynamic commonalities of what appear to be discrete and antonymic terms?

For example, Pascarella and Terenzini (1991) argued that such dualistic thinking is relatively simplistic:

> things are either right or wrong, good or bad, and knowledge of which is derived from "Authority." The dichotomous categories include knowledge, values, and people, and they are absolute. (p. 29)

However, they ascribed that simplistic approach to cognitive and ethical immaturity. They described Perry's nine-stage (or, more properly, position) model of cognitive and ethical development which assigned dualistic thinking to the first four of those stages. After that was an intermediate stage in which analytic thinking skills began to replace unthinking acceptance, and the relativism of multiple knowledge claims replace the absolutism of good/bad knowledge, but where making choices amongst apparently equal alternatives was resisted. In the last three stages, people moved on to commitment, and an understanding that making choices was part of one's identity. For Pascarella and Terenzini, who were summarizing twenty years of research on *How college affects students*, the challenge was to identify the factors that were linked with substantive moral maturation, and to provide a post-secondary educational experience that promoted such maturation. Such an approach is in keeping with similar challenges in environmental education (e.g., Caduto [1985]).

In contrast, or in complement, post-structuralists and post-modernists have suggested that dualistic thinking is both fundamental to the way in which we construct reality, and essential to the maintenance of the *status quo* of modernity. That is, words are considered to gain meaning not so much through any correspondence to some real object, but through the particular ways in which they differ from other words. Thus, and as we have briefly discussed already, *profession* acquires its meaning less by having specific traits or attributes, than by having traits or attributes which some other word, such as *laity, charlatan* or *amateur*, can be shown to lack or to misuse. In such an analysis, this binary opposition is an active, dynamic social force, organizing our senses of self, social institutions and relationships of power. Each such pair is constructed as a superior term (the first one, e.g., man, culture, soul, reason) and an inferior one, derivative from and subordinate to the first (e.g., woman, nature, body, emotion). The degree to which we come to accept that hierarchical relationship as commonsensical, natural or normal is the degree to which inequality is legitimated (Gaard, 1993; Seidman, 1994).

The question, then, is whether professionalization allows society as a whole to move beyond dualistic thinking, or whether it, and the accompanying commodification and territorial distribution of knowledge, freezes most of us (or allows most of us to remain) in an obligate and self-justificatory moral adolescence. Or whether, given the dynamic, unstable and multivocal meanings through which we construct social reality, professionalization is better considered a Damoclean sword, symbolic of the dangers that attend a violence-based prosperity, but symptom and tool rather than cause.

More particularly, how will environmental education, with its central goal of human moral maturity, benefit and lose from professionalization? Can it survive the "good educator/bad educator" dilemma — the wise and compassionate teacher opposed to the self-aggrandizing monopolist — as public funding for education disappears? Can we outgrow our apparent willingness to entrust our moral responsibilities and agency to others, and/or to take others over when virtual reality and global restructuring may be rigidifying the ultimate dichotomy of have and have-not? Do we really want to increase the credibility and capability of environmental knowledge by exposing and excluding the charlatans and quacks to whom Johnson refers in the opening quotation? Or are we acting in self-interest, agreeing to unite segments of such disparate occupations as lawyer, accountant, biologist and teacher into one meta-community called *environmental professional*, in order to gain the benefits of exclusive control (for the professionals) and experts-as-commodities (for the not-professionals)?

It is important to remember that the creation of professions rested and rests on difference — that professions have a conceptual density because something else was and is *not*-professional. Again, referring to a dictionary, we find an important bifurcation in the common sense understanding of being *not*-professional. That is, it can be a matter of passive absence of professional essence, or an active opposition to that essence (Allen, 1990):

- *nonprofessional*: not professional (esp. in status). Neutral in sense. F. Latin *non* not: not doing or having or involved with; not of the kind or class described; used to form a neutral negative sense when a form in *in-* or *un-* has a special sense or (usu. unfavourable) connotation.

137

- *unprofessional*: contrary to professional standards of behaviour etc.; not belonging to a profession; amateur.

People are nonprofessional because they do not have the essential attributes, and are not engaged in doing that combination of knowledge and practice that is societally sanctioned as professional.

Thus, professions (as discussed earlier) were defined in opposition to other parts of the labour force:

- the semi-professions: which lack autonomy in relation to either the client or the employer (e.g., public school teacher);
- the skilled occupations: which lack autonomy and depend on professionals for the theoretical grounding of their work (e.g., Geographic Information Systems technician); and
- the semi-skilled or unskilled occupations: which lack autonomy and theory, and are essentially physical or manual in the practice of their work (e.g., draftsperson, logger).

The essential attributes which separate profession from nonprofession are, in order of descending importance, autonomy, a general and systematized knowledge base, and a predominantly intellectual practice. In other words, the concept of *profession* in relation to *nonprofession* makes sense of, or naturalizes, an ideology of a hierarchical workforce. Equally importantly, it contributes to an acceptance of the commodification of knowledge, and the positioning of professionals as quasi-capitalists who invest, and derive profit from, information.

In contrast to nonprofessionals, unprofessionals are people who have some or all of the essential attributes, or who are engaged in doing the special something that is the domain, of a professional — but who are being or doing it wrong. As the definition suggests, they either fail to meet professional standards, or they do what they do for love rather than money.

That is, the definitions of educators, environmental or otherwise, can be arranged in a dichotomous key of decreasing opposition:

1. receives a fee for educating others	2
1. does not receive a fee for educating others ..	amateur, volunteer
2. works for an employer	3
2. is self-employed	consultant
3. depends on other professionals for research	4
3. carries out research	professor
4. teaches discipline-based subjects	secondary school teacher
4. teaches young children	elementary school teacher

Central to the meaning of *professional environmental educator* is the exchange of educative labour for a fee. In any struggle to validate that professional status, one would therefore expect a movement to widen the perceived difference between the quality of the professionals and the not-professionals. At the same time, internal to the new profession are a series of differences which would have to be minimized (e.g., between consultant and elementary school teacher).

Thus, for environmental professionals (including environmental educators), the volunteers and activists of the environmental movement are the most likely candidates to be set up in opposition to a drive to professionalize. And the most likely characteristic around which to build metaphors of opposition would be motivation — the reason of the objective professional compared to the will of the volunteer (from the Latin, *voluntas*) and the love of the amateur (from the Latin, *amare*). In other words, given the context of environmental education in Canada in the 1990s, the strategies of professionalization may demand the construction of separation between environmental activists and environmental professionals by denying reason in the former and passion in the latter.

Moreover, given this construction of a binary opposition between reason and passion (and, by conflation, between professional and activist), the drive to professionalize environmental education may also target other groups for exclusion. I want to end this discussion of the possible effects of professionalization on environmental education with a consideration of two pieces of information. For me, they are evidence that we have remained entrenched in the old patterns and processes of the Dominant Social Paradigm, rather than sought the new and sustainable. They have to do with the linkages between capitalism and patriarchy (Witz, 1992).

First, in a report on the *Human resources in the environment industry* (1992), it was concluded by Ernst & Young (who prepared the report), and accepted by Employment & Immigration Canada (who published the report), and Industry Canada and Environment Canada (who shared federal responsibility for the development of the environmental industry) that, for the sixty to seventy thousand workers considered: ". . . compared to the general Canadian labour force, and on average, employees in the environmental industry are younger (20 to 45 years old), more highly educated and composed predominantly of men (almost 90%)."

This is a surprising finding, given that we have seen, for instance, that about half of the pool of some

BEST COPY AVAILABLE

1.2 million potential environmental educators are women; or that in only one grouping of potential environmental professionals (architects, engineers, urban planners) does the percentage of women fall as low as the 10 percent suggested for the environmental industry. It is certainly not from lack of interest, or from lack of will to take action. Again, we have seen that more women than men volunteer, either with formal volunteer organizations, or informally; and that the percentage of women interested in environmentally-related activities never falls to 10 percent (see also Day & Devlin, 1993; MacDonald, 1995, 1996).

Second, Snow (1991), in a survey of environmental non-governmental organizations in the USA, found that over half of the members of those organizations were women, but that less than one fifth of those women were in decision-making positions within their organizations. Admittedly, Snow's focus was on the dearth of competent managers within the environmental movement, and on the benefits (often perceived by the managers themselves) which management training would bring to social change. However, it is not promising to find an unproblematic acceptance, within a movement dedicated to social change, of the hierarchies and exclusionary practices of the wider (in this case, American) society.

The "true professions" have never been as warm a climate for the marginalized in society as they have for the dominant groups (Harris, 1981; Kinnear, 1985; Marshall, 1989; Sokoloff, 1992; Statistics Canada, 1995; Witz, 1992). For example, Armstrong & Armstrong (1992), in an overview of the professions in Canada, concluded that:

> although women have here as elsewhere flooded into the professions, pronounced patterns of sex segregation persist both within and between professional occupations. Evidence reveals that years of education and other objective characteristics do not account for the power, pay and prestige differences among professionals. Clear contrasts emerge in the marital and parental statuses of female and male professions. In short, for the professions sex counts. (p. 118)

One of the perceived challenges to professional autonomy has always been gender. Female-dominated professions (e.g., nursing, librarianship, social work) have tended to have less autonomy than male-dominated ones (e.g., doctors, physicians, lawyers), and to be considered to have that lesser autonomy because of women's individual pattern of psychological maturation, their biological or socialized identity, or because specialization of labour makes the most efficient use of human capital (Davidoff, 1986; Lindsay, 1994; Moore, 1988; Newman, 1985).

Are we, by the ways in which we are defining the work of environmental professionals, and by the concerns that we might have for the professional autonomy of educators, headed towards a reinstituionalizing of gender-based inequality? Would we find similar discrepancies in the representation within the environmental professions of visible minorities, aboriginal peoples, the disabled?

Returning to the argument for the professionalization of environmental education, I suggest that we must proceed with care. We cannot assume that the gains of professional autonomy are without costs, or that those costs are distributed fairly in relation to the benefits. If we develop a body of professional knowledge that is available on a user-pays basis, then we may exacerbate, rather than diminish, already-existing inequalities. If we limit the goals of environmental education to those marketable in a knowledge society and the Dominant Social Paradigm, then we will lose those very goals that made environmental education worthwhile.

I conclude this inquiry into the effect of professionalization on environmental education with the following brief story. The person who told it to me said that it was originally a Sufi story, and I must rely on her accuracy and my memory in this retelling.

Nasrudin had gone out for the evening, and returned home well after dark. As he walked along, he jangled his housekeys in his hand, as much for the cheerful noise as anything. But alas, he dropped the keys, and began to search for them under a streetlight. Soon, he had attracted the attention of a police officer and several passersby, all of whom joined in the hunt. After an hour of fruitless searching, the police officer said to Nasrudin that it was very unusual not to have found the keys, what with so many people looking, and with the advantage of the light. "Oh," replied Nasrudin, "it's not hard to understand why we haven't found the keys, because I dropped them in that alley over there." "Well, why aren't you looking in that alley then?" asked the police officer. "Why, because it seemed so much easier to search where there was light," Nasrudin replied.

So it may be with professionalization, and our search for ways to move to a New Environmental Paradigm.

Notes on contributor

Marilyn MacDonald is Assistant Professor of Women's Studies at Simon Fraser University. She has done research, taught, and published on the relationship between women and the environment, women and science/engineering/technology, women and the medical system, and feminist pedagogy in school systems. Marilyn is currently doing a survey of women, work and the BC environmental movement and studies of female-friendly science teaching materials (including distance and computer assisted education).

Notes and references

Abbott, A. 1983. Professional ethics. *American Journal of Sociology* 88(5):855-885.

Abbott, A. 1988. *The system of professions: an essay on the division of expert labour*. Chicago: University of Chicago Press.

Allen, R. 1990. *The concise Oxford dictionary* 8th ed. Oxford: Clarendon Press.

Anderson, R. 1992. Social impacts of computing: codes of professional ethics. Social Sciences Computer Review 10(4):453- 469.

Anon. (Ed.) 1990. *The Oxford dictionary of quotations* 3rd ed. Oxford: Oxford University Press.

Armstrong, P., Armstrong, H. 1992. Sex and the professions in Canada. Journal of Canadian Studies 27(1):118-135.

Aronowitz, S., Giroux, H. 1991. *Postmodern education: politics, culture, and social criticism*. Minneapolis : University of Minnesota Press.

Ball, S. (Ed.) *Foucault and education: disciplines and knowledge*. New York:Routledge.

Barnhart, R. (Ed.) 1988. *Barnhart dictionary of etymology*. Boston:H.W. Wilson.

Basta, N. 1992. *Environmental jobs for scientists and engineers*. New York: J. Wiley & Sons.

Battersby, C. 1989. *Gender and genius: towards a feminist aesthetics*. London: Women's Press.

Bennett, S. 1991. *Ecopreneuring: the complete guide to small business opportunities from the environmental revolution*. New York: J. Wiley & Sons.

Bennion, F. 1969. *Professional ethics: the consultant professions and their code*. London: Charles Knight.

Bohnen, L. 1977. The sociology of the professions in Canada. In M. Trebilcock (Ed.), *Four aspects of professionalism*. Ottawa: Consumer Research Council of Canada.

Bok, S. 1980. Whistle-blowing and professional responsibilities. In D. Callahan & S. Bok (Eds.), *Ethics teaching in higher education*. New York: Plenum.

Bolaria, B., Bolaria, R. (Eds.). 1994. *Women, medicine and health*. Halifax: Fernwood

Bowler, P. 1989. *The invention of progress: the Victorians and the past*. Oxford: Blackwell.

Bowler, P. 1992. *The environmental sciences*. Norton History of Science Series. London: W.W. Norton.

Britzman, D. 1991. *Practice makes practice: a critical study of learning to teach*. Albany: State University of New York Press.

Brockett, R. (Ed.) 1988. *Ethical issues in adult education*. New York: Teachers College

Brundtland, G.H. (chair) 1987. *Our common future*. The World Commission on Environment and Development. Oxford: Oxford University Press.

Buchholz, R., Marcus, A., Post, J. 1992. *Managing environmental issues: a casebook*. Englewood Cliffs: Prentice Hall.

Buffington, L. 1974. Professionalization: a strategy for improving environmental management. *Humboldt Journal of Social Relations* 2(1):18-21.

Buttel, F., Catton, W., Dunlap, R. 1978. Environmental sociology: a new paradigm? *American Sociologist* 13(4):252-256.

Bynum, W., Browne, E., Porter, R. (Eds.) 1981. *Dictionary of the history of science*. Princeton University Press, Princeton.

Caduto, M. 1985. *A guide on environmental values education*. UNESCO-UNEP International Environmental Education Programme; Environmental Education Series 13. Paris: Boudin.

Cahn, M. 1995. *Environmental deceptions: the tension between liberalism and environmental policymaking in the United States*. Albany: State University of New York Press.

Callahan, J. (Ed.) 1988. *Ethical issues in professional life*. New York: Oxford University Press.

Canadian Council for Human Resources in the Environment Industry 1994. *A framework for skill-set documentation*. Calgary: CCHREI.

Carlson, R. 1988. A code of ethics for adult educators? In R. Brockett (Ed.), *Ethical issues in adult education*. Columbia University, New York: Teachers College.

Carlson, R. 1988. A code of ethics for adult educators? In R. Brockett (Ed.), *Ethical issues in adult education*. Columbia University, New York: Teachers College.

Christensen, K. 1994. *The politics of character development: a Marxist reappraisal of the moral life*.Westport: Greenwood Press.

Cocks, J. 1989. *The oppositional imagination: feminism, critique, and political theory*. New York: Routledge.

Code, L. 1991. *What can she know? Feminist theory and the construction of knowledge* Cornell University Press, Ithaca.

Covello, V., Johnson, B. (Eds.) 1987. *The social and cultural construction of risk: essays on risk selection and perception*. Boston: Dordrecht.

Crittenden, P. 1990. *Learning to be moral: philosophical thoughts about moral development*. London: Humanities Press International.

Cross, P. 1981. *Adults as learners: increasing participation and facilitating learning*. San Francisco: Jossey-Bass Publishing.

Cullen, J. 1978. *The structure of professionalism: a quantitative examination*. New York: Petrocelli Books.

Davidoff, L. 1986. The role of gender in the "First Industrial Nation": agriculture in England 1780-1850. In R. Crompton, M. Mann (Eds.), *Gender and stratification*. London: Polity, Cambridge/Blackwell.

Day, K., Devlin, R. 1993. Can volunteer work help explain the male-female wage gap? In *Economic equality workshop Conference Proceedings*. Ottawa: Status of Women Canada.

Derber, C. (Ed.) 1992. *Professionals as workers: mental labour in advanced capitalism* Boston: G.K. Hall.

Disinger, J., Schoenfeld, A. (Eds.) 1987. Special issue: focus on environmental studies (prologue, epilogue). *The Environmental Professional* 9(3)/ North American Association of Environmental Educators Monograph IV.

Douglas, M., Wildavsky, A. 1982. *Risk and culture: an essay on the selection of technical and environmental dangers*. Berkeley: University of California Press.

Douglas, M. 1985. *Risk acceptability according to the social sciences*. New York: Russell Sage Foundation.

Duchesne, D. 1989. *Giving freely: volunteers in Canada*. Ottawa:Statistics Canada Labour Analytic Report 4.

Dunlap, R., Catton, Wm. 1979. Environmental sociology. *Annual Review of Sociology* 5: 243-273.

Dunlap, R., Gallup, G. Jr., Gallup, A. 1992. *The Health of the Planet survey: a preliminary report on attitudes toward the environment and economic growth*. Princeton: G. Gallup International Institute.

Dunlap, R., Mertig, A. 1992. The evolution of the U.S. environmental movement from 1970 to 1990: an overview. In R. Dunlap, A. Mertig (Eds.), *American environmentalism: the U.S. environmental movement, 1970-1990*. Philadelphia: Taylor & Francis.

BEST COPY AVAILABLE

Dunlap, R., & Van Liere, K. 1978. The new environmental paradigm: a proposed measuring instrument and preliminary results. *Journal of Environmental Education* 9:10-19.

Dunlap, R., & Van Liere, K. 1984. Commitment to the dominant social paradigm and concern for environmental quality: an empirical examination. *Social Science Quarterly* 65: 1013-1028.

Ellin, J. 1982. Special professional morality and the duty of veracity. *Business and Professional Ethics Journal* 1(2): 75-90.

Ernst & Young, 1992. *Human resources in the Environment Industry: summary report*. Ottawa: Employment and Immigration Canada.

Etzioni, A. (Ed.) 1969. *The semi-professions and their organization: teachers, nurses, social workers*. New York: Free Press.

Falk, N. 1992. *Voluntary work and the environment: local environmental initiatives in Europe*. Dublin: Loughlinstown House.

Fisher, L., & Schaffer, K. 1993. *Older volunteers: a guide to research and practice*. Newbury Park: Sage.

Forsyth, P., & Danisiewicz, T. 1985. Toward a theory of professionalization. *Work and Occupations* 12: 61-69.

Fouillard, A. 1993. *Emerging trends and issues in Canada's Environmental Industry*. Ottawa: National Round Table on the Environment and the Economy.

Frangsmyr, T., Heilbron, J., & Rider, R. (Eds.) 1990. *The quantifying spirit in the 18th century*. Berkeley: University of California Press.

Gaard, G. (Ed.) 1993. *Ecofeminism: women, animals, nature*. Philadelphia: Temple University Press.

Gass, J. (Ed.) 1973. *Environmental Education at the university level*. Lausanne: Organization for Economic Co-operation and Development/Centre for Educational Research and Innovation.

Gaskell, J., & McLaren, A. (Eds.) 1987. *Women and education: a Canadian perspective*. Calgary: Detselig.

Gorlin, R. (Ed.) 1990. *Codes of professional responsibility* 2nd ed. Washington: Bureau of National Affairs.

Gregg, A., & Posner, M. 1990. *The big picture: what Canadians think about almost everything*. Toronto: Macfarlane Walter & Ross.

Grimwood, C., & Popplestone, R. 1993. *Women, management and care*. London:Macmillan.

Haber, S. 1991. *The quest for authority and honor in the American professions, 1750-1900*. Chicago: University of Chicago Press.

Hacking, I. 1990. *The taming of chance*. Cambridge: Cambridge University Press.

Harding, C. (Ed.) 1985. *Moral dilemmas: philosophical and psychological issues in the development of moral reasoning*. Chicago: Precedent Pub.

Harding, S. 1986. *The science question in feminism*. Ithaca: Cornell University Press.

Harding, S. (ed.) 1993. *The "racial" economy of science: toward a democratic future*. Bloomington: Indiana University Press.

Harding, S., Hintikka, M. (Eds.) 1983. *Discovering reality: feminist perspectives on epistemology, metaphysics, methodology, and philosophy of science*. Dordrecht: D. Reidel.

Harris, B. 1981. *Beyond her sphere: women and the professions in America*. Westport: Greenwood.

Hird, J. 1994. *Superfund: the political economy of environmental risk*. Baltimore: Johns Hopkins University Press.

Hsiao, H. 1986. NEP and social change: an analysis of environmental values in Taiwan. *National Taiwan University Journal of Sociology* 18: 81-134

Industry Canada/Environment Canada 1994. *A strategy for the Canadian Environmental Industry*. Ottawa: Supply and Services Canada.

Johnson, B., & Covello, V. (Eds.) 1987. *The social and cultural construction of risk*. D. Dordrecht: Reidel Publishing.

Johnson, T. 1972. *Professions and power*. London: Macmillan.

Kimball, B. 1992. *The "True Professional Ideal" in America: a history*. Cambridge: Blackwell.

Kinnear, M. 1995. *In subordination: professional women, 1870-1970*. Montreal: McGill-Queen's University Press.

Kultgen, J. 1982. The ideological use of professional codes. *Business and Professional Ethics Journal* 1(3): 53-69.

Kultgen, J. 1988. *Ethics and professionalism*. Philadelphia: University of Pennsylvania Press.

Laxer, G. 1991. *Perspectives on Canadian economic development: class, staples, gender and elites*. Toronto: Oxford University Press.

LeLorraine, E., & Nash, T. 1982. *If you love this planet*. Montreal: National Film Board.

Lemons, J. (Ed.-in-chief) 1995. Aims and scope of the Journal; Code of ethics and standards of practice for environmental professionals; Requirements for certification. *The Environmental Professional (the Official Journal of the National Association of Environmental Professionals)* 17(3): frontpage, unnumbered.

Longino, H. 1990. *Science as social knowledge: values and objectivity in scientific inquiry*. Princeton: Princeton University Press.

Macdonald, D. 1991. *The politics of pollution: why Canadians are failing their environment*. Toronto: McClelland & Stewart.

MacDonald, M. 1986. Talking to herself: communication and the concept of the living earth. In J. Swann (Ed.), *Is the Earth a living organism?* Washington: National Audobon Society.

MacDonald, M. 1992. On sexism and science. In G. Finn (Ed.), *Limited edition: Voices of women, voices of feminism*. Halifax: Fernwood.

MacDonald, M. 1993. A biography of Rachel Carson. *Canadian Women's Studies/les cahiers de la femme* 13(2):105-110.

MacDonald, M. 1995. Environmental industries and professionalization: ethical issues for women in science and engineering. Vancouver: Occasional Pape, Sustainable Development Research Institute, University of British Columbia.

MacDonald, M. In prep. a. The green ceiling: women and the professionalization of environmental caring. In M. MacDonald, R. Raglan, M. Hessing, S. Hutcheson, M. McMahon (Eds.), *As Canadian as possible under the circumstances: concepts of women, environment and Canada*.

MacDonald, M. in prep. b. Conceptions of environmental education: a quantitative analysis of post-secondary approaches in Canada.

Mackie, M. 1991. *Gender relations in Canada: further explorations*. Toronto: Butterworths.

MacNiven, D. (Ed.) 1990. *Moral expertise: studies in practical and professional ethics*. New York: Routledge.

Marcinkowski, T., Volk, T., & Hungerford, H. 1990. *An environmental educational approach to the training of middle level teachers: a prototype programme*. UNESCO-UNEP International Environmental Education Programme; Environmental Education Series 30.

Marshall, K. 1989. Women in professional occupations: progress in the 1980s. *Canadian Social Trends* 12:13-16.

Martin, M., & Schinzinger, R. 1989. *Ethics in engineering* 2nd ed. New York: McGraw-Hill.

McCrea, E. 1996. Summary of two 1995 surveys of the membership of the North American Association for Environmental Education, facsimile dated 4/1/96.

McCormick, J. 1989. *Reclaiming paradise: the global environmental movement*. Bloomington: Indiana University Press.

McDowell, B. 1991. *Ethical conduct and the professional's dilemma: choosing between service and success*. Westport: Quorum Books.

McErlean, A., Williams, E., & Wittwer, F. 1995. Environmental education: a blueprint for achievement? *The Environmental Professional* 17(3):263-270.

Menzies, H. 1996. *Whose brave new world? the information highway and the new economy*. Toronto: Between the Lines.

Millard, J. 1992. The professions in Canada. *Journal of Canadian Studies* 27(1):3-4.

Moore, H. 1988. *Feminism and anthropology*. Minneapolis: Minnesota University Press.

Moyad, A. 1990. A report card on environmental education. *The Environmental Forum* 7:37-42.

Newman, L. (Ed.) 1985. *Men's ideas/women's realities: Popular Science, 1870-1915*. New York: Athene Series, Pergamon Press.

Nitzan, S., & Tzur, J. 1989. Price and quality of professional services and codes of ethics. *European Journal of Political Economy* 5(1):31-48.

Noble, D. 1992. *A world without women: the Christian clerical culture of Western science*. New York: Alfred A. Knopf.

Osiel, M. 1984. The politics of professional ethics. *Social Policy* 15 (1):43-48.

Pascarella, E., Terenzini, P. 1991. *How college affects students: findings and insights from twenty years of research*. Jossey-Bass, San Francisco

Pellegrino, E., Veatch, R., & Langan, J. (Eds.) 1991. *Ethics, trust and the professions: philosophical and cultural aspects*. Washington: Georgetown University Press.

Pennell, A., Choi, P., & Molinaro, L. (Eds.) 1991. *Business and the environment: a resource guide*. Washington: Management Institute for Environment & Business, Island Press.

Petulla, J. 1987. *Environmental protection in the United States: industry, agencies, environmentalists*. San Francisco: San Francisco Study Center.

Pierce, J., Lovrich, N., Tsurutani-Taketsugu, A., & Takematsu, J. 1987. Culture, politics and mass publics: traditional and modern supporters of NEP in Japan and the US *Journal of Politics* 49(1):54-79.

Pritchard, M. 1991. *On becoming responsible*. Lawrence: University Press of Kansas.

Rest, J., & Narvaez, D. (Eds.) *Moral development in the professions: psychology and applied ethics*. Hillsdale: Lawrence Erlbaum Assoc.

Rich, J. 1994. *Professional ethics in education*. Springfield: Charles C. Thomas Pub.

Rogers, A. 1993. *The Earth Summit: a planetary reckoning*. Los Angeles: Global View Press.

Rossiter, M. 1984. *Women scientists in America: struggles and strategies to 1940*. Baltimore: Johns Hopkins University Press.

Rossiter, M. 1995. *Women scientists in America: before affirmative action, 1940-1972*. Baltimore: Johns Hopkins University Press.

Rueschemeyer, D. 1983. Professional autonomy and the social control of expertise. In R. Dingwall, & P. Lewis (Eds.), *The sociology of the professions*. London: Macmillan.

Schiebinger, L. 1989. *The mind has no sex? women in the origins of modern science*. Cambridge: Harvard University Press.

Schleifer, R., Davis, R., & Mergler, N. 1992. *Culture and cognition: the boundaries of literary and scientific inquiry*. Cornell:Cornell University Press.

Seidman, S. 1994. *Contested knowledge: social theory in the postmodern era*. Cambridge: Blackwell.

Shepherd, L. 1993. *Lifting the veil: the feminine face of science*. Boston: Shambhala.

Shortt, S. (Ed.) 1992. *Medicine in Canadian history: historical perspectives*. Montreal: McGill-Queen's University Press.

Simon, R. (Ed.) 1994. *Neutrality and the academic ethic*. Lanham: Rowman & Littlefield.

Simmons, D., Knapp, C., & Young, C. (Eds.) 1990. Setting the EA agenda for the 1990s. *Proceedings of the 1990 Conference of the North American Association for Environmental Education*. Troy: NAAEE.

Simpson, J., Weiner, E. 1989. *Oxford English dictionary* 2nd ed., 20 vols. Oxford: Clarendon Press.

Slayton, P. 1977. Professional education and the consumer interest. In M. Trebilcock (Ed.), *Four aspects of professionalism*. Ottawa: Consumer Research Council of Canada.

Smith, D. 1987. *The everyday world as problematic: a feminist sociology*. Boston: Northeastern University Press.

Smith, D. 1993. *Texts, facts, and femininity: exploring the relations of ruling*. London: Routledge.

Snow, D. 1992. *Inside the environmental movement: meeting the leadership challenge*. Washington: Island Press.

Sokoloff, N. 1992. Black women and white women in the professions: occupational segregation by race and gender, 1960-1980. *Perspectives on Gender Series*. New York: Routledge.

Spender, D. 1995. *Nattering on the Net: women, power and cyberspace*. North Melbourne: Spinifex.

Statistics Canada 1993a. *Occupation: the Nation '91 Census*. Ottawa: Statistics Can. Cat. 93-327.

Statistics Canada 1993b. *Employment income by occupation: the Nation '91 Census*. Ottawa: Statistics Can. Cat. 93-332.

Statistics Canada 1993c. *Guide to the SOC 1991 and the NOC*. Ottawa: Standards Division, Statistics Canada.

Statistics Canada 1995. *Women in Canada: a statistical report* 3rd edition. Ottawa: Statistics Canada.

Steger, M., Pierce, J., Steel, B., & Lovrich, N. 1989. *Political culture, postmaterial values and the New Environmental Paradigm: a comparative analysis of Canada and the United States*. Political Behaviour 11(3):233-254.

Stehr, N. 1994. *Knowledge societies*. London: Sage.

Stone, C. 1987. *Earth and other ethics: the case for moral pluralism*. New York: Harper & Row.

Thomashow, M. 1995. *Ecological identity: becoming a reflective environmentalist*. Cambridge: MIT Press.

Tight, M. 1988. *Academic freedom and responsibility*. Milton Keynes: Open University Press.

Torstendahl, R., & Burrage, M. 1990. *The formation of professions: knowledge, state and strategy* . London: Sage.

United States Environmental Protection Agency 1992. *Building a shared vision for environmental education: a conference sponsored by the federal task force on environmental education*. Washington: Office of Communications, Education and Public Affairs.

Ursel, J. 1992. *Private lives, public policy: 100 years of state intervention in the family*. Toronto: Women's Press.

Weaver, F. 1991. *Liberal education: critical essays on professions, pedagogy and structure*. New York: Teachers University Press.

Westra, L. 1994. *An environmental proposal for ethics: the principle of integrity*. Lanham: Rowman and Littlefield.

Witz, A. 1992. *Professions and patriarchy*. New York: Routledge.

Wueste, D. (Ed.) 1994. *Professional ethics and social responsibility*. Lanham: Rowman and Littlefield.

Wuthnow, R. (Ed.) 1991. *Between states and markets: the voluntary sector in comparative perspective*. Princeton: Princeton University Press.

Zeller, S. 1987. *Inventing Canada: early Victorian science and the idea of a transcontinental nation*. Toronto: University of Toronto Press.

BEST COPY AVAILABLE

Environmental Education as Values Education: A Critical Framework

Pamela Courtenay Hall, University of British Columbia

Environmental education in Canada and elsewhere is hindered by a lack of access to the useful results of recent research on critical thinking, values education, and the relation between environmental ethics and the science of ecology. Lacking the frameworks for exploring environmental values in inclusive and open-minded but also critical and educative ways, some teachers try to avoid value issues altogether except for the most uncontroversial sort. On the other hand, some teachers feel convinced that the science of ecology has forced a holistic understanding of nature upon us — that everything in nature is connected with everything else, that ecosystem stability depends upon diversity, and so on. On the basis of this alleged scientific warrant, they feel that the promotion of environmentalist values in the classroom is not only permissible but mandated by the environmental problems we face.

These are not two extremes. They are practices one meets up with regularly in elementary and secondary classrooms. What is problematic about them is that both the avoidance strategy and the ecology-as-warrant strategy prevent the exploration of value issues that is fundamental to effective environmental education. The ecology-as-warrant strategy makes the further mistake of a) assuming that ecology is dominated by a single paradigm and that this paradigm is "holistic," and b) assuming and communicating that it is appropriate to look to science to determine our values for us.

Recent literature on environmental education hasn't helped with these problems. For example, two of the most popular of recent publications, David Orr's *Ecological Literacy* (1992) and C.A. Bowers' *Education, Cultural Myths, and the Ecological Crisis* (1993), both promote an environmentalist approach to environmental education that is insightful in many important ways, but which falls short on the criteria of *inclusiveness*, *open-mindedness*, and *criticalness*. As much as environmentalist perspectives have been left out of the curriculum, this problem is not best corrected by building them into the curriculum to the exclusion or trivialization of views and literature from other (including "dominant") perspectives. Further, the questioning which Orr and Bowers both promote is always of dominant Western beliefs and practices, and never of environmentalist claims. Their critiques are important, but environmental education's critical focus should not be employed only on dominant culture discourses and withheld from environmentalist ones.

This is an important point, for particularly in the intermediate and senior grades, students caught up in consumerism and dismissive of environmentalist concern are not likely to encounter the uncritical promotion of environmentalist values in the classroom as beckoning. This is overwhelmingly the case in the post-degree Teacher Education classes I have taught at the University of British Columbia. Whenever the topic of environmental education and teacher bias has come up, the dominant concern expressed in every class has been to speak against the promoting of environmentalism among students: "It's great to do environmental eduction in the schools, but teachers shouldn't impose their environmentalist views on students." In every class, I have had to point out that teacher bias in environmental education comes in any of many stripes, a large number of them non- or anti-environmentalist. The challenge then is to figure out how to deal with these biases.

Whatever their orientation, many teachers of environmental education need access to clear and concise discussion of the varieties of teaching strategies that can be used to enable students to explore value issues in ways that are inclusive, open-minded, critical, educative, and not misinformed about the nature of ethics or the nature of science. In other words, teaching strategies which a) enrich the student's understanding of other points of view and of how to deal with conflicts of values; and that b) engage the student in thoughtful and critical exploration of existing practices, proposed reforms, and his or her own environmental practices and values. This paper will make a beginning at developing a framework for such strategies.

There is also a need for clear discussion of the problems that attend the claim that ecology forces environmentalist values and a holistic understanding of life upon us. These problems are best understood by exploring what environmental philosophy, the history of ecology, the philosophy of science and feminist theory have to reveal about reading ethics out of science so simply (Courtenay Hall, 1995). But to render this into the form of a framework for teaching strategies is the work of another paper.

A practical framework for exploring values in environmental education

The purpose of this paper, then, is to develop a practical framework for exploring values in environmental education programs, and to outline the philosophical justification for this framework. The point of the framework is to facilitate the exploration of values in inclusive and open-minded but also critical and educative ways. My ultimate objective is to help teachers deal soundly and effectively with the values education dimensions of environmental education.

I will argue that the approaches I refer to as *Clarification, Cultivation, Critical thinking* and *Moral Perception* (see Figure 1) are all essential components of effective values education in public schools. What follows is part of a larger project critically exploring each of these approaches from the perspective of the others as well as from the perspective of: a) my own experiences in values education, environmental education, and teaching critical thinking, b) recent work in feminist ethics and pedagogy, and c) recent work in phenomenological and direct realist approaches to understanding the role of perception in moral experience and in knowledge generally.

The four approaches and their place in recent history

From the 1960s to the present, curriculum initiatives in values education have been dominated by two approaches, the *Values Clarification* approach and the *Critical Thinking* approach. The *Values Clarification* approach aims to help students to clarify the values which they hold. Its methods include open-ended questions, exercises and group discussions. The purpose of these is to elicit students' views and values, and to encourage listening, comparison, and reflection by the students. It is based not only on psychological, philosophical and moral recognitions of the importance of including students' experiences and concerns in the curriculum, it is also based on the conviction that to help students to clarify the values which they hold is the only form of moral education a teacher has the right to engage in. To attempt to do more is to indoctrinate, values clarificationists argue, and this is an abuse of the teacher's position.

Many philosophers of education and others were concerned with the moral relativism that this approach seemed both to assume and to spawn. The understanding of morality embedded in this approach seemed to be unduly subjectivist. What more teachers can legitimately aim to do in terms of values education *at least* includes the teaching of moral concepts and of moral reasoning(Coombs, 1980). This conviction was the genesis of reasoning approaches or *Critical Thinking* approaches to values education, a movement which shares with the earlier *Cognitive-Developmental* approach of Lawrence Kohlberg (1975), an emphasis on the role that reasoning plays in moral experience.

But classroom teachers have never been slaves to the whims of curriculum developers, and whether they embrace the new curriculum of the hour or ignore it, they generally set up their classrooms with some clear ideas of the sorts of attitudes, and dispositions, which they want to see their students develop and practice during the course of the semester. This idea that there are certain character traits which should be developed in the classroom is the basis of the lower-profile but popular movement in values education known as *Character Education*. I call this the *Cultivation* approach because of its emphasis on cultivating certain virtues and its ties to Aristotelian, Humean or communitarian approaches to moral philosophy.

Now clearly, even the *Values Clarificationist* and the *Critical Thinker* are committed to some modest form of this "cultivation of virtues" approach in so far as they actively engage in fostering a concern for clarity in students. The *Critical Thinking* approach goes further, of course, in nurturing a whole host of intellectual and moral virtues needed for effective critical thinking. But the difference is that the *Cultivation* approach embraces a set of virtues which go beyond those necessary for achieving clear or critical thinking among students. Further, the *Cultivation* approach ascribes a narrower role to reason in moral experience than is typical among *Critical Thinking* approaches.

Advocates of a *Perception/Empathy* approach take even stronger issue with the reasoning focus of *Critical Thinking*, arguing that moral judgement is never simply a matter of trying to make rational, unbiased judgements on the basis of neutrally obtained observations. Moral judgement depends crucially on moral perception, which is a complex set of attunements, understandings, attitudes and abilities that require example, nurturing and exercise for their development. Drawing on feminist reconceptualizations of moral experience and ethics, the *Perception/Empathy* approach is committed also to the view that there is something deep in Western cultures that has led to the suppression of the role of perception, caring and empathy in moral

The Approach	Aim	Methods
Clarification approach More broadly, Self-reflective approaches	Help students to clarify the values which they hold.	(Teacher and peer example are common to all.) Open-ended questions, exercises & group discussion to: • elicit views and values, • encourage listening, comparison & reflection.
Cultivation approach Spectrum from indoctrinating (*) to encouraging the development of certain virtues (Character ed'n) Links with Virtue theory	Help students learn the values, beliefs, and ways of behaving necessary for them as members of society: • For them to have a meaningful life in our society? • For them to get ahead in the world? • For them to be cooperative and productive citizens?	• Extrinsic rewards, enforcement, punishment • Encouragement, praise, correction, questioning • Teacher & peers as examples • Stories & films with role-model value (positive or critical) • Cooperative group, team or class projects • Community work • Experiential education, • Some of these methods involve habituation as well as critical reflection.
Reasoning approach Critical thinking	Help students learn to make and act on reflective and responsible decisions.	• List of reasons for/against • Research, discussion and role-play to explore the reasons behind differing points of view • Learning critical concepts • Evaluating own and others' *reasons*; e.g., Principle-testing.
Perception approach Links with Naturalism, Fem. ethics, Existentialism, Hermeneutics . . .	Help students develop their capacities to recognize and appropriately respond to the moral features of situations, i.e., help them to develop their capacities for moral perception, caring, and imaginative empathy.	• Stories, speakers, films, radio interviews, plays, artwork, field trips, community work . . . • Small, supportive group discussion of life experiences, of particular issues, of the above activities . . . • Critical exploration of own *standpoint* and own *present limitations of empathy*.

Figure 1. *Approaches to Moral Education*
(Note: Each approach above is really a heterogeneous set of approaches.)

experience and theorizing. This "something deep" has variously been identified as patriarchy, logocentrism, etc. A firm commitment of the *Perception/Empathy* approach is this that moral education must include a revalorization of these features of moral life (Baier, 1995; Murdoch, 1987; Nussbaum, 1990).

Each of these approaches has important features to contribute to environmental education (and to values education generally), but each has important lacks which make them essentially complementary to each other; that is, all are needed. A program lacking connection with the students' own experiences and values (emphasized in the clarification approach) will be less likely to involve and thereby less likely to educate. A program which opts out of the conscious cultivation of certain socially and individually important virtues (emphasized in the *Cultivation* approach) will cultivate unreflectively selected character traits in an accidental fashion, because it is a fact of social life that children learn to *be* in the ways that their social environment encourages them to be. To refrain from intelligent guidance in the habits that students develop in the classroom is to acquiesce to the guidance of traditions not reflected upon and social forces not recognized. Indeed, students' values and characters are not miraculously inborn in them whole and complete. In response to the conditions that surround students, some capacities develop while others wane. (A Deweyian expression of this would be in terms of habits formed.) It is the teacher's job to set things up to enable students to exercise virtues, and thereby cultivate them.

This approach makes explicit what some educators do not like to talk about: the fact that education involves the effort to shape the student's character and beliefs in certain directions. Once made explicit, the question of *which* direction can receive the public debate it deserves.

But values education cannot rely exclusively on the *Clarification* approach supplemented by the guidance provided by recognizing certain virtues as legitimate ones to cultivate. As Jerrold Coombs has argued, reasoning plays a prominent role in moral experience: "We do ask for and give reasons for moral claims, we do accept some reasons as relevant and reject others as irrelevant, we do challenge moral claims by offering counter examples, ..." (Coombs, 1980). A program lacking in helping students to grow as critical thinkers risks failing in helping students learn how to evaluate the values and practices they embrace, and the values and practices embraced in their society.

Of course, it was the original intent of the *Values Clarification* movement to engage students in reasoning by asking them pointed questions to help them reflect on their values. But the lack of resources and education, to help teachers not schooled in these teaching methods to learn how to use them, led the movement to degenerate in most cases into classroom discussions flavoured by relativism. The concern to educate became restricted to the concern to affirm. It is also possible to identify the virtues of open-mindedness and reflectiveness as among the virtues we ought to cultivate. However, the need to think critically is so important to recall against the naive subjectivism or conformism that can occur by default, that the approach bears a name unto itself.

But the *Reasoning* approach to moral education is often (not always, but most often) accompanied by ideals of objectivity and neutrality which need scrutiny from the stand point concerns identified in the *Moral Perception* approach. First of all, moral judgement is not a matter of trying to make rational, unbiased judgements on the basis of neutrally obtained observations. It depends crucially on moral perception, which is a complex set of attunements, understandings, attitudes and abilities that require example, nurturing, and exercise for their development. How we perceive a situation depends dramatically upon what we are looking for, what we are prepared to perceive, how closely we look, what we refuse to see, and how well-developed our perceptual capacities and abilities are. There is in principle no objective starting point in our observations for rational judgement to exercise itself on (Blum, 1994; Harding, 1993; Murdoch, 1990; Nussbaum, 1990).

Feminist theorists have argued that there is something deep in western cultures that has led to the suppression of the role of perception, caring and empathy in moral experience (variously identified as patriarchy, logocentrism, and so on). Observing that women have traditionally been charged with the tasks of taking care of people's needs, and so have traditionally been trained to develop the attentiveness, empathy and caring required to do this well, feminine and feminist moral theorists have raised the challenge that these qualities of character have historically been trivialized and ignored by western moral philosophers and theorizers of moral development. In the place of these qualities of character, the canonical texts of moral philosophy have given *reason* the central role in moral experience, inspiring the impossible quest of showing how this could work. It can't, feminine and feminist theorists argue, because good moral judgement depends not just upon reason but upon a host of sensibilities and abilities that cannot be traced to reason. These include, among others, perception, empathy, and concern to help and not harm.

The view of perhaps most feminine and feminist moral theorists is that moral judgements are often made on the basis of an intuitive understanding of the moral features of a situation. But while the masculinist bias that obscured this understanding had to wait till the late 20th century rise of feminist philosophy to be discovered, dissatisfaction with a rationalist account of moral experience did not. Virtue theory and sentiment theory have been recalcitrant but well-defended themes in the history of western moral philosophy, with Aristotle and David Hume numbering in the ranks of their defenders. Whatever the meanderings of its ancestry, the point of the *Moral Perception* approach for moral education is that these inadequately recognized features of moral life must be revalorized and made central in moral education.

The fuller philosophical justification for this set of approaches, and for reconceptualizing environmental education as values education, relies upon a reinterpretation of the philosophy of John Dewey that focuses on the transactionalism developed in his later work. The understandings of education, individual and society which Dewey developed provide strong ground for identifying all four of the above approaches as essential to an effective values education program. Dewey's philosophy has been variously hailed and rejected in the recent literature of environmental philosophy and environmental education as a source of insight for current concerns (e.g., Bowers, 1993; Chaloupka, 1987; Taylor, 1990; Orr, 1992). I believe that a better approach to the question of Dewey's usefulness to environmental education today lies not in asking how well or how poorly he anticipated current understandings of the cultural roots of our environmental problems (although his prescience on other grounds is amazing; e.g., his critique of mind/body dualism). It lies rather in the understanding he develops of what education is and why it ought to be conducted in ways that engage with the experiences of students no less than with the concerns and activities of the broader society in order to help the student grow into a caring, competent and critically reflective citizen.

Although Dewey is frequently characterized as a child-centred educational theorist (e.g., Levin, 1991), he importantly is not. The kind of education he recommended was (and remains) difficult to accomplish within the limitations of class size, teacher preparation time, teacher education, and public expectations that characterize American and Canadian public schools. The collapse of *Progressive* educational reforms into child-centred schooling indeed has its roots in these difficulties, and its parallel in the monopoly of values education which the *Values Clarification* movement effected for two decades. We are in danger of reproducing this dynamic if value issues remain ignored or simplistically answered in environmental education. Dewey's philosophy of education makes clear why this shouldn't happen, and the four approaches to valued education identified above show how it can be avoided. But as the record of the past shows, these understandings need clear and public communication and debate if they are to have a chance to effect change in the public school system.

Critical thinking approaches to social studies (e.g., Werner and Nixon, 1990) are being developed at a healthy rate. But the lack of explicit attention in the literature of environmental education, to questions of how to deal with ethics in the classroom, has been so problematic that it was the impetus for Bob Jickling's hosting of the invitational colloquium at Yukon College, Whitehorse in July, 1995, where local and First Nations educators and theorists met with counterparts in environmental ethics and environmental education from Canada, the U.S. and Australia. The work done at that conference, in this volume, and in this paper, is toward the better integration of "Environment, Ethics, and Education." I hope this framework is helpful toward that end. The work continues.

Notes on contributor

Pamela Courtenay Hall teaches philosophy of education, feminist theory, and environmental education at the University of British Columbia. A former math and physics teacher, she recently completed her Ph.D. in philosophy at the University of Toronto with her thesis *Ecoholism and its Critics: A Critical Exploration of Holism in Environmental Ethics and the Science of Ecology.* She is the mother of two young children, Matthew and Stefan, and a frequent teller of original nature stories at local elementary schools.

Notes and references

Baier, A. 1995. *Moral Prejudices: Essays on Ethics.* Cambridge: Harvard University Press.

Burke, J. & Walker, E. 1995. "Rock-On Yukon." (Primary, Grade 5 Social Studies, and Grade 8 Earth Science curriculum resource on mining.) Whitehorse: Canada-Yukon Mineral Development Agreement, Yukon Chamber of Mines, and the Yukon Department of Education.

Coombs, J.R. 1995. "Israel Scheffler's Theory of Moral Education: A Sympathetic Critique," *Studies in Philosophy and Education* (forthcoming,1995).

Coombs, J.R. 1980a. "Attainments of the morally educated person," chapter 2 of *The development of moral reasoning*, ed. Donald Cochrane and M. Manley-Casimir. New York: Prager.

Coombs, J.R. 1980b. "Validating moral judgments by principle testing," chapter 2 of *The development of moral reasoning*, ed. Donald Cochrane and M. Manley-Casimir. New York: Prager.

Courtenay Hall, P. 1995. "Ecoholism and its Critics: A Critical Exploration of Holism in Environmental Ethics and the Science of Ecology." Ph.D. thesis, Philosophy Department, University of Toronto. 388pp.

Levin, R. A. 1991. "The Debate over Schooling: Influences of Dewey and Thorndike," *Childhood Education* Vol. 67, no. 4:71-75.

Murdoch, I. 1992. *Metaphysics as a Guide to Morals.* London: Chatto and Windus.

Nussbaum, M. 1990. *Love's knowledge: Essays on Philosophy and Literature.* New York: Oxford University Press.

Instead of Environmental Education

Anthony Weston, Elon College

1.

Next year, my companion and I and some friends will — we hope — start a school. Our children are moving into the first years of official schooling, and we want something different for them than we think we can find in either the public or private schools available to us.

It is hard to say exactly what we want. It is not a simple or a single thing. Most of all, I think, we want our children to grow up with a sense of delight and possibility — or rather, not to lose this sense, for they have it now, as what we so oddly call "preschoolers," as if their relation to school defined their very being. We want them to grow up aware and self-aware enough to create and re-create genuine community with others around them. So too we want them to feel a sense of delight in and care for the Earth — which is what I would like to mean, most fundamentally, by "environmentalism." In our naming ceremony for our daughters we spoke of their kinship with the spiders and the owls and the rivers, welcoming them not only to the human community and their Jewish continuities but to their community with the larger living Earth, too. One of my colleagues sent me these lines from Chang Tsai on the birth of my younger daughter:

> Heaven is my father and earth is my mother
>   and even such a small creature as I
>   find an intimate place in their midst.
> All people are my brothers and sisters
>   and all things are my companions.

So we want to start a school. Better, an *alternative* to school — as I will explain in the course of this paper. Of course for all sorts of reasons it may not happen. I mention this project here partly in order to contextualize what follows in this paper. These are not the words of a disconnected critic who faces no practical or constructive demands. I would like to think that all my concerns are practical and constructive. At any rate they'd better get practical and constructive fast. Also, besides trying to start a younger person's school, I teach college. I teach environmental ethics, I teach philosophy of education. So all of these concerns are very close to me, part of a daily struggle. I am trying to work from a radical critique of education toward a real alternative, especially in environmental education. It is not easy, but it seems to me to be absolutely essential.

Teachers get impatient with the radical critique of education when it is perceived as mostly negative. Perhaps this is why the radical critique rarely gets discussed at all in the education journals: most of their subscribers are in the schools already, and committed to them. In any case, whatever the reason, there is not one word, at least that I could find, about the radical critique of education in the *Journal of Environmental Education* from its inception twenty-six years ago until now.[1] Yet the critique is crucial — especially in new and evolving and delicate areas like our relation with the larger living Earth. Despite the seemingly uncontroversial and unproblematic character of the goal of "ecological literacy," for example, it seems to me that this notion — this metaphor, really — is deeply problematic, and so *ought* to be controversial, and precisely from an environmentalist point of view. Moreover, this point is *not* wholly negative; in fact, it can arise in a way that is profoundly suggestive and constructive. My goal in this paper is not to oppose environmental education, but rather, in the course of applying the radical critique of education to environmental education as it stands, to open up the possibility of another and broader understanding of what we are about as environmentally-concerned citizens and educators — and finally a broader focus for constructive action as well.

2.

Education as it exists has no lack of critics. The most vocal critiques at present, at least in the US, are "conservative." These are not so deep, in my view — they tend to want to "go back" to (what I see as) a more rigid, standardized, technical and moralized curriculum, away from many of the liberalizing moves of the 20th century. A deeper conservative critique — that, for example, schools tend to undermine the authority of parents — leads some of the more religious to home-school. One may also pull out of school for the opposite reason: precisely because it is too *good* at inculcating subservience, both behaviorally and imaginatively. From this point of view the liberalization of school is not, as it were, morally misguided; the real problem, very different, is that it is self-defeating. On this view, the attempt to liberalize school is doomed to failure precisely by the fact that it takes place in *school.*

The argument goes like this. Regardless of its explicit content, school itself — the institution and its practices — has a meaning too, a "hidden curriculum" as Ivan Illich calls it in *Deschooling Society*, something in fact far more powerful than its manifest or official curriculum. For Illich this "hidden curriculum" is the ranking and grading system and all the social certifications and (even more crucially) de-certifications that go with it. John Holt argues in *Instead of Education* that school is corrupt from the start fundamentally because students *have* to be there. How could a compulsory institution be liberatory?

Both Illich and Holt also challenge the assumption that everything important must be learned in school. In fact we learn constantly, and in a variety of ways, most powerfully when we become engaged by some project of our own. It is only "learning for it's own sake" (that mantra, that formula to which we're all supposed to be committed) that, as Holt argues, necessitates compulsion. Learning for the sake of keeping your boat afloat or winning the heart of an Italian or starting a revolution needs no compulsion, if those goals engage us.[2] But school (says Holt) is usually antithetical to learning in this sense, to self-determined and self-scheduled learning: in short the kind of learning that actually does contribute to competence and self-confidence.[3] Illich stresses the opposite side of the same point: that the reduction of learning to something that happens in schools, and something that people usually must be forced to do, delegitimates all other forms of craft, skill, and wisdom, everything that takes place or could take place in the normal course of life.

Other systematic problems with school are more familiar: the fragmentation of the curriculum; the tendency to reduce knowledge to cleverness; the thorough infusion of economic values; the confinement of students to the school building and grounds, systematically isolating them from the very world they are supposedly being prepared for; ossified administrative hierarchies that consume more and more of the dwindling money and space available, and too often reward the least committed and imaginative administrators and teachers; and the lack of social support that might translate into more money and space, not to mention decent salaries.

These problems go deep, and they are painful to think about for anyone who has children and, indeed, for all of us who have gone through the schools ourselves, or work in them. No doubt some of the problems are overstated. Perhaps Holt and Illich go too far. Certainly there are "good" schools where the impact of some of these problems is reduced. Certainly there are also counter-tendencies in some schools, toward genuine critical thinking and empowerment, as bell hooks for example argues.[4] But I think it must be acknowledged that there is also something to the critiques: too much for comfort, something deeply disturbing and difficult to respond to. Just because the critiques are generally not discussed does not mean that they have somehow been answered. I think we ignore them, more often, because we do not know what to say.

The liberal social critic Katha Pollitt recently argued for prayer in the public schools on the grounds that it will *alienate* children from religion. This is the outcome she favors, though of course it is just the opposite of what its normal proponents intend. Maybe she's serious: anyway, one sees her point. The "hidden curriculum" may override and defeat everything else, no matter how congenial.[5] To teach what we care about may be self-defeating. My own schooling, which I guess was not so bad as schooling goes, left me with a deep antipathy for Shakespeare, for certain novels such as *Moby Dick* and Hawthorne's *The Scarlet Letter*, and for most sports. Since then, luckily, I have learned better, though I still can't stand gymnastics. Today, of course, books like *The Scarlet Letter* would not make it past the parents' vetting committee anyway, which Pollitt would probably consider a good thing: at least then kids would not have to overcome having "studied" them in order to read and love them. Though first, of course, as Holt would add, they must survive school with a desire to read at all.

3.

Looking at environmental education in this light is not encouraging. Perhaps school is exactly what we should not wish upon the values we care about. Will *A Sand County Almanac* become the equivalent of *The Scarlet Letter* for my daughters? Or maybe *Walden* — which has a head start because it is read already as a "classic" and therefore, of course, boring (let's be honest: this is the view of 95% of our students, and within their frame of reference, they're right). I sometimes use *Walden* in my college philosophy classes: it is wonderful to see the text come alive for students who have encountered it in a very different key before. But why should they have had to encounter it first in that other way? And what of the great majority of students for whom it will be the only encounter, thereafter only a bad memory?

Northern Michigan environmentalist Rod Bearup, beginning to think about teaching a deep ecology course at a local college, visits a Native American friend of his. "After hours of discussion I left frightened and confused. He had asked, 'How can I expect to address matters of the spirit within the intellectual confinement of the classroom?' No, he was not willing to take part in the project."[6] But the point is not that such things can never be said at all. The phrase "intellectual confinement of the classroom" is crucial here: and, as Bearup might have added, part of what is crucial is not merely its intellectual confinement but its actual, *physical* confinement. Certain kinds of spaces preclude and overpower most of the messages offered within them; and the very fact of talking about nature *inside* carries a powerful message all by itself.

There are some fine ideas in the environmental education literature. Barbara Robinson and Evelyn Wolfson suggest trying to get students back into their senses, and to perceive the world as many animals do, by rubbing an "onion trail" around some of the objects in a yard and having the students get down on all fours and sniff out the track. They have students role-play other animals, in a kind of mini-Council of All Beings. They have students do an ecological inventory of, and then begin to take responsibility for, their own school grounds.[7] There are ideas here I'd like to use for my college environmental ethics course, some are similar to ideas I already use in other classes. North Carolina publishes a *Teacher's Guide to Environmental Education Programs and Resources*, also listing an impressive array of programs and possibilities.[8] Like Robinson and Wolfson, for example, the compliers suggest training teachers to teach the experimental sciences by "enhancing the school grounds as a wildlife habitat through encouraging plantings of native wildflowers, shrubs, and trees . . . and returning selected mowed areas to meadows and natural sites" (p. 13). North Carolina has distributed 1400 rock kits and state geological maps to schools across the state, etc. (p. 54).

It seems ungentlemanly to complain. But there are problems too: in fact, profound problems, problems that make me reluctant to hope for such things for my children. All of these are "lessons" which students are required to learn to receive the necessary certifications. *We* are still deciding what is good for *them*, only now it is not more American history or chemistry labs but getting back into their senses or back in touch with the Earth. And of course, once again, there is everything to be said for these goals. Getting back into their senses is good for them. I love the idea of students taking responsibility for their own school grounds, and so on. The problem is not with these goals. The problem is that they are *our* goals. They are not goals that emerge naturally out of these children's or students' own lives (they might, of course, but whether or not they do, children/students are being told that this is what they must now learn; the wheel of course requirements grinds on). That's Pollitt's point too, beneath the irony: even the most delightful thing can turn grey if entrusted to a clumsy and authoritarian institution.

In introducing projects like the onion rub, Robinson and Wolfson note that:

> young children are naturally curious and sensitive and are eager to become involved in first-hand experiences in the world around them. However, as the learning process advances and children develop cognitive skills, they often lose their sense of wonder and involvement. By the time many are adults, the barriers to receiving information from their senses may be so great that they trust the written or spoken word far more than their own sensory information. Today many adults either intellectualize about environmental problems or feel completely removed from them.[9]

Robinson and Wolfson trace the environmental crisis itself in part to this profound sensory alienation. They introduce exercises to counter it. But they are surprisingly incurious about where it comes from. Surely this loss of wonder and the connection to the senses does not just *happen*. What have the kids been doing while this profound change is going on? We know the answer: going to school (though also, to be fair, watching TV). And when growing minds and bodies spend eight hours a day sitting in classrooms with books — away from the more-than-human world, reduced to one sense or less, running through a *curriculum* (literally, "a course to be run") that others have chosen for them, and when the world of higher education and work is essentially more of the same, what else would we expect?

4.

There is a deeper worry too. It is not just that the schools' "hidden curriculum" can subvert the official curriculum. The hidden curriculum also shapes the official one.

The kind of religion that Pollitt imagines the schools naturally inclining toward is hierarchical and authoritarian, not notably open-ended or pantheistic or social-action-oriented. Not Zen Buddhism or Quakerism, but patriarchal Christianity, with God as a supernatural version of the Principal. And this parallelism is no accident. It arises precisely from the deep affinity between the hierarchical and authoritarian structure of patriarchal Christianity and the hierarchical and authoritarian structure of school. Not just in terms of disciplinary power, either, but in terms of course content too. Knowledge and power go together here. Principal/God is effectively both omnipotent and omniscient; the teacher/priest is His local representative. Both institutions preclude independent action and egalitarian community. It is this parallel structure, this collusion in practice, that Pollitt wants to expose.

So what sort of environmentalism would the schools naturally incline towards? Schools' structure remains hierarchical and authoritarian; knowledge is presented as an already-codified, unified, expert-certified system. We might therefore expect something similar in the forms of environmentalism and environmental ethics officially approved for use in environmental education programs in school. Furthermore, despite what the right wingers say, schools remain profoundly conservative social institutions, and so remain profoundly human-centered as well; thus I think we might well expect a significant degree of anthropocentrism.

Do the facts bear out these fears? Take the anthropocentrism charge first. A study by J. F. Disinger recently concluded that "[environmental] educators generally favor the dominant social paradigm, placing greater emphasis on 'wise use' than non-use perspectives."[10] David K. J. Withrington defines environmental education as follows: "Environmental education is essentially a practical process for equipping man with the knowledge, skills, and commitment to improve his environment."[11] Here it's not just the anthropocentrism that's a little shocking (and "man" too is finally beginning to make us uneasy), but also the managerial/technocratic shape it takes, as if the relevant knowledge was already well-established, and as if it were the most obvious thing in the world what constitutes an "improvement." So we come to the other charge too: schools by nature tend to present knowledge as fixed and "given" — after all, only a pretty high degree of epistemological self-confidence can justify school in the first place. Environmental education Withrington-style is exactly what we should expect.

Bob Jickling points out that many environmental education programs emphasize "problem-solving."[12] Consider for example William Stapp, *et al.'s* influential definition, according to which one aim of environmental education is "a fundamental understanding of the biophysical environmental problems confronting man, how these problems can be solved, and the responsibility of citizens and government to work toward their solution."[13] Jickling argues that this is far too restrictive a conception. The question of our relation to nature is not just a set of "problems" inviting problem-solving "skills" for resolution. In its tone too, Stapp's definition sounds managerial in outlook, still confidently centered in the human universe as we know it: beset by problems, to be sure, but not needing to be re-imagined at its core.[14] And as Jickling points out, all of this is (once again) natural for schools. We especially like "problems" because the corresponding suggestion is that there are precise, well-established, and discrete "solutions," lending themselves to trim and methodical course design and (most crucially of all) efficient grading.

These problems affect much more than the mainstream. Consider a writer far removed from Withrington's and Stapp's anthropocentrism, and a fierce critic of certain aspects of schooling as we know it: David Orr, especially in his 1992 book *Ecological Literacy*. There are many aspects of Orr's critique that I applaud: his challenge to the abstraction of much modern knowledge, ecological knowledge included; his mistrust of the managerial/technocratic attitude; also his recognition of many of the points made above about what he calls the "tacit curriculum":

> Process is important for learning. Courses taught as lecture courses tend to induce passivity. Indoor classes create the illusion that learning only occurs inside four walls isolated from what the students call, without apparent irony, the "real world." Dissecting frogs in biology class teaches lessons about Nature that no one would verbally profess. Campus architecture is crystallized pedagogy that often reinforces passivity, monologue, domination, and artificiality.[15]

All of this seems quite accurate and vital to me. We therefore turn to Orr's positive prescriptions with high hopes. He says a lot, much of it again entirely right in my view. Like Robinson and Wolfson, for example, he suggests "using campus resource flows (food, energy, water, materials, and waste) as part of the curriculum."

Then we come to "ecological literacy." "No student," Orr tells us, "should graduate from any educational institution without a basic comprehension . . . of the laws of thermodynamics, the basic principles of ecology . . ." and so on through a list of eleven such requirements, including, as #11, "environmental philosophy and ethics."[16] No doubt these general categories in turn could be spelled out with similar lists: for example in environmental ethics the mandated list would presumably include concepts like "anthropocentrism" and its opposite;

intrinsic value; and so on. I suppose we could even speak of "environmental ethics literacy" as well.

Have our hopes been met? I think not. Instead, once again, we have just the sort of thing that schools love: mandated, discrete curricular items, "given," already established, testable. I guess this is why the literacy metaphor is so widely current in environmental education — it is not just Orr's. What is startling, though, is how deeply Orr undercuts his own critique with this last turn of the screw. Most of the items on this list are abstract. Almost all of them privilege specialized knowledge over non-school-certified and non-school-stratified craft and skill. Most of them "crystallize" a monologic and dominating pedagogy. Yet these were the very problems Orr just complained about.

Illich rather pointedly remarks that "Many self-styled revolutionaries are victims of school. They see even 'liberation' as a product of an institutional process."[17] So here. Faced with the unbelievably destructive results of an ever more schooled society, even so radical a critic as Orr can only imagine — more school. Faced with the abstraction and disconnection that attend literacy (Orr himself notes that the only peoples who have so far managed to live sustainably on this Earth have been illiterate, "or at least, like the Amish, do not make a fetish of reading"[18]) — all he (or we?) can imagine is — more literacy, a different kind of literacy.

I am not against reading, I love reading, and obviously I am not against knowing something about ecology or environmental ethics. The objection lies with the assumption that school, and school alone, must "teach" these things, an idea for which the "literacy" metaphor is the perfect vehicle. Literacy is a mandatable, testable, technical skill, quite apart from (and, as I worried above, probably at odds with) a love of reading and the willingness or eagerness to have one's life changed and enriched by it. But mandatable, testable, technical skills are what school is all about. Once again the circle closes.

I think that this kind of paradox is common. Almost all critiques of the content of contemporary education, even very radical critiques, even when like Orr they acknowledge the "tacit curriculum," still, when it comes round to their actual proposals for reform, revert entirely to talking about the official curriculum.[19] But the official curriculum is irremediably shaped by the tacit curriculum just critiqued. Orr says that one reason "ecological literacy" is hard to teach is that we have come to believe that education is an indoor activity.[20] Right. But *literacy* is an indoor activity. Does it not then fundamentally carry a message that undercuts its overt point: "the illusion" that, as Orr himself puts it, "learning only occurs inside four walls"? And how *could* we have missed this effect, even for a second, if in our imaginations we had not already reduced all of the possibilities for learning to something that happens in school?

At the Whitehorse conference we were honored by the visit of a number of local Elders, speaking of how they teach their own young. In the discussion period, a member of the audience asked about the possibility of Elders coming into the schools to speak of these things. The general response was that it has been tried and did not work. The setting was too artificial — neither Elders nor students felt (were!) at home; the students "asked too many questions," didn't know how to listen; and, most crucially, students could not join any ongoing *work* in the context of which real learning could take place. Everything was reduced to an episodic encounter or "presentation," and to words. And none of this is surprising. School is an artificial setting; talking and presenting and questioning are its favorite methods; ongoing work has no place there. The Elders, in their typically understated way, were therefore telling us that our schools *cannot* teach love for the Earth. Not because we cannot make the words part of the curriculum, but because precisely by doing so we obscure and undercut what the words actually mean.

5.

So I don't really want to start a school. I want to start an alternative to school. There are many questions about what would it look like that we cannot begin to enter into here. But one question in particular is key for this paper: how could an alternative learning process (it's hard to know what to call it) deliberately and effectively engage its students/participants with nature, but avoid the kind of self-undercutting just discussed?

I had better say from the start that I do not have anything like a complete answer to these questions — indeed barely an answer at all. My argument most crucially is that we need to make the experiment, open the discussion, try out some possibilities. But I do think that some preliminary conclusions can be drawn.

Here is my proposed first step. Suppose that we ask to what extent this is really an "educational" issue at all. Perhaps the entire problem is wrongly posed from the start if we ask how we can *educate* for environmental awareness and responsibility, for delight and care. Mightn't these things be nurtured — mightn't they *have* to be nurtured — in some very different way?

Here is how I "learned" much of what I "know" about "nature." Quarrying sandstone for our house, and then chiseling it, piece by piece, and hauling the pieces up scaffolds for my father to cement them into place. (I learned that rocks are heavy. I also learned a lot about strata and sedimentation and fossils and why Frank Lloyd Wright used a certain style of masonry on his prairie houses.) Watching the birds, over thirty or so years in all different habitats and seasons (the hawks and vultures that circle the freeways, always signalling what is happening over the next rise; the dozen new kinds of warblers I saw in one hour one morning around a Maine cabin in spring, migrating through; the meadowlarks and whip-poor-wills that no longer sing around my boyhood prairie home). Discovering and growing edible flowers. Backpacking. Gardening.

As Holt would be quick to point out, none of these things have anything to do with school. We ought to take this perfectly obvious observation with great seriousness. *None of these things have anything to do with school.*[21] They are the reasons that I am here today, they are the stuff of my delights and dreams, but all of them have come to me independently and sometimes in spite of school.

These experiences are not merely preludes to something that might more properly be called "environmental education." They *are* "environmental education," properly speaking. What I know of geology comes from quarrying. Watching the birds opened up a profound range of further kinds of awareness for me: of patterns of migration and seasonal change, for instance, and of the transformation of habitat (with the coming of the corporate farms the meadowlarks and whip-poor-wills lost their little copses and fallow fields, and vanished). A boyhood hobby of star-watching (I never "took a course" in astronomy) finally, twenty or so years later, made me sensitive enough to the changing patterns of light and dark that I can be a decent all-year gardener (in North Carolina it is possible) and still later opened up an understanding of the great cycle of the holidays (Christmas, Hannukah, and New Year's to Easter and Passover, to Halloween and Samhain, etc.) as deeply tied to the waxing and waning of the light and the seasons, the Solstices and the Equinoxes.[22] Orr defines "ecological literacy" as "that quality of mind that seeks out connections."[23] I have argued that the literacy metaphor serves us poorly, but surely we do need to be seeking out connections. I think this is precisely what my own non-school "environmental education" has enabled me to do.

Still, "environmental education" is not the right phrase — not against the background of the kind of critique I have suggested here. I propose a different conception. Let us call it "enabling environmental practice."

Rock-quarrying and bird-watching and the like are, in the first place, practices: that is, they are practical, they are things that one does, rather than things one reads about or watches on TV; things that call for and call forth skill, artistry, craft; and that extend over time (we speak of "a practice," of "practices" as a noun), even across generations. I learned stone masonry from my father, birding from both parents. They are *environmental* practices, because they engage us with the more-than-human, with the larger living world. And they are *enabling* practices in a sense I borrow from Illich's *Tools for Conviviality*: they open possibilities ("enabling" them) rather than closing them ("disabling" them), and they enable us, to find connections ourselves, rather than disabling us by telling us what the connections are and then threatening us with tests to make sure we got the ones we were supposed to get.[24]

Instead of environmental education, then, I propose that we focus upon enabling environmental practice. Instead of teaching our children about plants, for example, we should make garden spaces for them, and let then *their* questions and needs as gardeners drive whatever "study" or development we do from there. Or perhaps they will not want to garden. So, they won't. Plants will eventually come up in other ways, maybe even in ways we would not have thought of ourselves, as subjects for watercolor paintings, or sources for dyes, or who knows what. (My older daughter is fascinated by the thought that spiderwebs were once used for bandaging wounds: the connection is partly that for some reason the whole idea of doctoring interests her right now.) We can generate building projects that will carry student/participants into a working relation with the natural world, like quarrying did for me. Even something as simple as making a sandbox allows us to cut the trees and make the boards ourselves, to dig the sand ourselves in the dunes or on the beach, and consider how the sandbox should be shaped and used. Also how to discourage the cat from using it for a litterbox. Everything connects!

In this spirit we might re-approach some of the suggestions in the environmental education literature mentioned in section 3 above. Consider again the onion-rub project, for example. Above I complained that however laudable the goals of such projects ("reconnecting with our senses," here), still they are not goals that emerge naturally out of these children's or students' own lives, and therefore that they necessitate compulsion and most profoundly disempower rather than empower. Thinking about enabling environmental practice would suggest that we explore more systematic, practice-based, "structural" ways to address our disconnection from the senses, so that ultimately these goals (or effects) do emerge naturally out of these children's or students' own lives. The questions here are wider-angled. Here is one: how could we make our learning spaces[25] more *smelly*? We could plant herbs all around, instead of the scentless plants (or no plants) we usually encounter. Food-preparation smells might *not* be instantly pumped out by kitchen fans. (We could practice identifying them.) Bouquets, perfumes, animals, machine oils, storms, fresh bread: the world easily gets smellier. The point is that smell could surround us; orienting to smell would become second-nature, part of the setting of our lives and not some special exercise in school.

Take bird-watching. We could imagine that birdfeeders and bird-friendly plantings could become something of a civic duty. Bird count days, like the Audubon society runs in the US on Christmas, could become national holidays. Or again, taking a degree of ecological responsibility for our own buildings and their grounds — one of the ideas I have cited from the standard environmental education literature as well as from critics such as Orr — would be far more effective if it were an expectation of all of us, all of the time. After all, what messages do students get when schools are the *only* places for which one is so responsible?

On the theme of holidays, we could imagine any number of new ones. Imagine "Star Nights" on which all lights everywhere are turned out: these could be timed to coincide with meteor showers, eclipses, occlusions. The poet Antler recalls Emerson's epiphany — "If the stars came out only one night in a thousand years, how people would believe and adore, and preserve from generation to generation, remembrance of the miracle they'd been shown" — and imagines the scene:

> Whole populations thronging to darkened
> baseball stadiums and skyscrapertops
> to sit holding hands en masse
> and look up at the billion-year spree
> of the realm of the nebulae![26]

We might co-ordinate other festivals with the great animal migrations: whales, salmon, hawks, warblers. Every bioregion has its possibilities.

Let me emphasize again that it is not my aim in this paper to argue against environmental education as such. Instead, my aim is to broaden our conception of what we might be about — as environmentally-concerned *people*, not just educators — so that we might become more effective in practical action, and finally so that the true possibilities for "education," even of the traditional variety, become clear. There certainly remains work for the schools to do. Against the background of larger social and personal practices such as bird or star holidays, for example, schools might fill in the factual background: kids could do some bird study, learn the constellations. Facts are what schools are good at: so let them teach facts. The great difference from "environmental education" as it presently exists, however, is simply that the school aspect would not be the whole story. Enabling practices are not confined to school, are not a "school thing" or anything like that famous "learning for its own sake," and therefore do not have to be motivated by the threat of social decertification, failure, if one isn't interested. Schools can offer "the facts": it is not the job of the schools, but rather of the rest of the culture, to lead the students to want to know those facts. So environmental education might become more like driver education is now, in American high schools: one of the few things that students actually can't wait to learn, because it manifestly enables them to take their place in a larger personal and social practice, shared by parents and peers, already familiar in all manner of ways, and a practice that further enables their own growing independence and adulthood.[27] Besides, it's *fun*: that is one reason I am speaking a lot about holidays here. Why not? Holidays are social practices every bit as much as voting or taking out the trash. Environmentalism ought to pay a little more attention to these aspects too. Politics and garbage are not the most engaging activites around.

6.

I conclude with a philosophical twist. I want very briefly to relate the arguments and concerns in this paper to environmental ethics proper, and in particular to the arguments about and models of environmental ethics I have advanced in my paper "Before Environmental Ethics"[28] and in my book *Back to Earth*.

I have suggested that it is for partly *structural* reasons that environmental education in practice tends toward closed, given, theoretical, fact-based approaches, and thus to take quite a different direction from, if not to actively discourage, the kind of delight in and care for the Earth which I would define as true environmentalism. The structure of school (isolated, hierarchical, and all the rest) itself pushes in that direction. What is striking is that a parallel thing happens — or so I argue in "Before Environmental Ethics" — in environmental ethics. Environmental ethics is still struggling for legitimacy as a sub-discipline of ethical philosophy, a struggle compounded by the academic suspiciousness of anything interdisciplinary, on top of the academic suspiciousness of anything normative. So similar kinds of self-constraints evolve. Environmental ethics too, at any rate in its academic forms, tends toward "closed," codified, theoretical, expert-certified systems. Uncertainty, taking other animals seriously, sleeping on the ground, listening to voices far outside the usual academic circuits, embracing openendedness and complexity: these things do not get you tenure. The shape of contemporary environmental ethics is no accident.

Not only environmental education, then, but environmental ethics itself can become inimical precisely to environmentalism, to delight in and care for the earth. Nothing guarantees that such deep matters as our relation to the more-than-human can be captured or codified or formally "taught" in any way at all, especially right now. Philsophers as well as educators need to take note. The easy assumption that we already have such answers is part of our general epistemological over-confidence. Moreover, if environmental ethics really can't be either codified or taught, then it would not be surprising that attempts to do so (pedagogical or philosophical) prove counter-productive. At least the possibility demands attention.

Once again too, however, the result is not to leave us totally stymied. Just as there is something to do "instead of" — or as the larger cultural context for — environmental education, so too is there something to do "instead of" — or as the larger cultural context for — environmental ethics. In fact, it is the very same thing. Enabling environmental practice is also a way — I think our only way — to evolve an environmental *ethic*. So enabling practice turns out to be our mandate both as environmental philosophers and as environmental educators.

There is no way we can transcend our thoroughly anthropocentrized world in thought alone. The philosophical category of "non-anthropocentrism" is just a negation, a dialectical opposition, not something that can be articulated as a usable ethic for us at this stage of our cultural history. What we *can* do is to "enable" the evolution of some such ethic in the future, with a real content that eventually can be specified, through manifold environmental practices that engage us in the more-than-human world in open-ended ways: in short, again, through enabling environmental practices. New holidays, again, and new ways of building houses and common buildings, new "transhuman etiquettes" for our relations with other animals, gardens, quiet zones. Out of such practices, out of a long process of awakening or reawakening to our deep embeddedness within the more-than-human, out of an extended "dialogue with a place,"[29] we may someday be able to formulate an "environmental ethic" that (maybe!) will lend itself to formal philosophical theory and formal environmental education.

Though then too, I suspect, one of the essential tasks for free spirits will always be to resist codification and closure. Aldo Leopold himself insisted that *no* ethic is ever "finished." Right now, in any case, a little free-spiritedness all around would be a good idea . . . .

Notes on contributor

Anthony Weston teaches at Elon College, North Carolina. He is the author of *Back to Earth: Tomorrow's Environmentalism* and a number of articles in environmental philosophy, as well as books and articles in ethics, logic, social philosophy, and philosophy of education. Currently his main project is starting an early elementary school (or, alternative to school).

Notes and references

[1] In 1984, midway through these years, Thomas Tanner, himself one of the more regularly cited authors in the *Journal*, published an account of what he called "The Evolution of Environmental Education as Inferred from Citation Analysis" (*Journal of Environmental Education* 16 [1984]). The conclusion in part is that "references to the environmental foundations of EE dominated the earl[y] period, but have much diminished in recent years, to be replaced by references to psychological foundations and EE itself. This was interpreted as representing a maturation of the field, as it turned from defining its structure, concepts, and goals, to testing the pedagogical procedures for attaining those goals" (p. 20). These remarks make a philosopher nervous. I do not think we would agree that a field is "mature" when it no longer needs to question itself: quite the contrary.

[2] Another influential critic should be mentioned here: Paulo Freire. Illich writes: "The Brazilian teacher Paulo Freire has discovered that any adult can begin to read in a matter of forty hours if the first words he deciphers are charged with political meaning. Freire trains his teachers to move into a village and discover the words which designate current important issues, such as the access to a well or the compound interest on the debts owed to the *patron* . . . . Since 1962 my friend Freire has moved from exile to exile, mainly because he refuses to conduct his

BEST COPY AVAILABLE

sessions around words which are preselected by approved educators, rather than those which his discussants bring to class" (Ivan Illich, *Deschooling Society* [NY: Harper and Row, 1970], p. 18). Freire's classic is *The Pedagogy of the Oppressed* (NY: Seabury Press, 1974).

[3] Holt would like to see education look more like Berlitz schools: "The Berlitz and other schools do not give us an exam to see whether we are smart enough to get in, whether we are 'Berlitz material' or 'Up to the Berlitz experience'. Nor do they say that their schools are the best because they are the hardest to get into. Once in the school, we study only the language we want . . . We stay only as long as we want ... They do not test us at the end to see how much we have learned, nor give us a diploma or any other kind of job ticket. They keep no records about us or our work for other people to see. They do not put a label on us to tell the world that we were good or bad students . . ." (John Holt, *Instead of Education* [NY: Dell, 1976], p. 19). Almost any community education — swimming classes at the local pool, or folkdance clubs that teach newcomers, just to name two within a mile of my home — are also good examples.

[4] bell hooks, *Teaching to Transgress: Education as the Practice of Freedom* (NY: Routledge, 1994). I am indebted to Val Plumwood for insisting on this point, and for pointing out hooks' work to me.

[5] Katha Pollitt, "Subject to Debate," *The Nation*, 26 December 1994, p. 788. In her own words: "In our country the constitutional separation of church and state has obscured the nonetheless real connection between the two as fellow enforcers of conformity, mystification and hierarchy. Prayer in the schools will make it plain to see . . . Right now religion has the romantic aura of the forbidden ... We need to bring it into the schools, which kids already hate, and associate it firmly with boredom, regulation, condescension, makework and de facto segregation, with business math and *Cliffs Notes* and metal detectors."

When I mentioned Pollitt's argument to Rick Kool at the Whitehorse conference, he responded with a joke, which goes like this: "Question: What is the best way to turn kids off a considered approach to sex? Answer: Sex education!" The underlying point is exactly the same.

[6] Rod Bearup, "Educating for Deep Ecology Action," *The Trumpeter* 8 (1991), p. 150. At length Bearup launches his course anyway, and reports it successful, though he does not really explain how he overcame the difficulties his friend feared.

[7] Barbara Robinson and Evelyn Wolfson, *Environmental Education: A Manual for Elementary Educators*. New York: Teacher's College Press, 1982.

David Orr details the farther implications of the current practice (he's speaking here particularly of colleges and universities). "A 'nice' campus is one whose lawns and landscape are well-manicured and whose buildings are kept clean and in good repair by a poorly paid maintenance crew. From distant and unknown places the campus is automatically supplied with food, water, electricity, toilet paper, and whatever else. Its waste and garbage are transported to other equally unknown places.

"And what learning occurs on a 'nice' campus? First ... students learn the lesson of indifference to the ecology of their immediate place.... Students also learn indifference to the human ecology of the place and to certain kinds of people: those who clean the urinals, sweep the floors, haul out the garbage, and collect the beer cans on Monday morning ...

"Second, students learn that it is sufficient only to learn about injustice and ecological deterioration without having to do much about them, which is to say, the lesson of hypocrisy. They hear that the vital signs of the planet are in decline without learning to question the *de facto* energy, food, materials, and waste policies of the very institution that directs them into responsible adulthood." David Orr, *Ecological Literacy* (Albany: SUNY Press, 1992), pp. 103-104.

[8] *Teacher's Guide to Environmental Education Programs and Resources*, North Carolina Department of Environment, Health, and Natural Resources, Office of Environmental Education, POB 27687, Raleigh, NC 27611-7687.

[9] Robinson and Wolfson, *Environmental Education*, p. 9.

[10] J. F. Disinger, "Environmental Education for Sustainable Development," *Journal of Environmental Education* 21 (1990), p. 5. This article was written before the rise of the self-styled "wise use" movement in the American West. I think Disinger means the term in the broader sense of what environmental ethicists call "anthropocentrism."

[11] David K. J. Withrington, "The UNESCO/UNEP Environmental Programme and its Implications for British Environmental Education," in David Hughes-Evans, ed., *Environmental Education: Key Issues of the Future* (Oxford: Pergamon Press, 1977), p. 33.

[12] Bob Jickling, "Environmental Education, Problem Solving, and Some Humility Please," *The Trumpeter* 8 (1991), pp. 153-155.

[13] William Stapp, et al., "The Concept of Environmental Education," *Journal of Environmental Education* 1 (1969), p. 33.

[14] This point and the point in the last paragraph about the managerial and technocratic shape of the reigning conceptions of environmentalism were well developed at the Whitehorse conference in papers and discussions by Marilyn MacDonald and Val Plumwood.

[15] David Orr, "What is Education For?" *The Trumpeter* 8 (1991), p. 101.

[16] *ibid.*, p. 102.

[17] Ivan Illich, *Deschooling Society*, p. 47.

[18] David Orr, "What Is Education For?," p. 99. Similarly, in the context of his essay in *Ecological Literacy* on the "Great Books" approach to education, Orr points out that St Francis of Asissi never wrote a "Great Book" (or anything, I guess).

[19] I do not know the work of C. A. Bowers well, but it appears to me that something similar happens here. In a book called *Education, Cultural Myths, and the Ecological Crisis* (called "daring" by Lester Brown in a back-cover endorsement), and specifically in an article called "The Anthropocentric Foundations of Educational Liberalism," Bowers charges even radical educational reformers like Freire with anthropocentrism — actually Cartesianism — because they privilege critical consciousness to the point of making it the whole aim of education (C. A. Bowers, *Education, Cultural Myths, and the Ecological Crisis* (Albany: SUNY Press, 1992); and "The Anthropocentric Foundations of Educational Liberalism: Some Concerns," *The Trumpeter* 8 [1991], pp.102-107.) I agree in a way; I always felt that *The Pedagogy of the Oppressed* is unduly dismissive of other animals, for example, along just these lines. Bowers' alternative, however, is essentially to use education to question and undercut this anthropocentrism (surely a laudable goal, but surely also, as he allows, another form of critical thinking) and to incorporate "curricular activites that have the potential to expand the sense of connectedness, meaning, and thus an awareness of self as part of a larger community, [like] dance, music, and art" ("The Anthropocentric Foundations," p. 107). Again laudable, but again matters of *curriculum*. I'm doubtful how "daring" this really is. I'm puzzled that in neither work are Holt or Illich mentioned at all: Bowers does not address the idea that reform might require not changing the curriculum but getting rid of it: School *itself*, according to *this* version of the "radical critique," is a technocratic, Enlightenment, and probably Cartesian institution — once again, everything Bowers is against.

[20] *Ecological Literacy*, p. 87.

[21] A major point for Holt and Illich: Illich, for example, writes: "Everyone learns how to live outside school. We learn to speak, to think, to love, to feel, to play, to curse, to politic, and to work without interference from a teacher" (*Deschooling Society*, pp. 28-29). And listen to this: Illich also reminds us that Karl Marx opposed a passage in the Gotha program which proposed to outlaw child labor. "He opposed the proposal in the interest of the education of the young, which could happen only at work" (p. 23).

[22] See my book *Back to Earth: Tomorrow's Environmentalism* (Philadelphia: Temple University Press, 1994), pp. 139-143.

[23] *Ecological Literacy*, p. 92.

[24] Ivan Illich, *Tools for Conviviality* (NY: Harper and Row, 1973).

[25] I am not assuming that there must be spaces for "education" separate from other life spaces. Ideal would be a large space in which a number of people live and work, in which certain areas might be more usual spaces for young people's projects, but nothing is permanently and structurally isolated from everything else. In co-housing schemes, the common house would be a natural such place.

While I'm on the subject — crucial in general for "unschool," but not quite the central theme here — let me add that I would also like, with Holt, to see "official" school *short*. School's sheer length is part of its greyness: probably anything you have to do forty hours a week, for twelve or sixteen years, is antithetical to delight and care.

[26] Antler, "Star-Struck Utopias of 2000," *The Trumpeter* 9 (1992), p. 92.

[27] Getting a driver's license does require passing a test, though not a test in school, so there is a way in which Driver's Education is still somewhat coercive. In response I should note that Holt is not against competence tests for specific practices, so long as the tests are clearly tied to the needs of the practice, are not identified with school, and the practice itself is not compulsory. (Schools as they now stand, by contrast, are a kind of mandatory test for *life*.) The motivation for learning to drive remains the attraction of the practice itself.

Another analogy is the study of music. Many people study music for the sheer love of music, making music when they can, by themselves or with whoever they can. None of this is tainted by the requirement that, if you want to make music with certain established ensembles, you need to meet their standards.

[28] Anthony Weston, "Before Environmental Ethics," *Environmental Ethics* 14 (1992):323-340.

[29] This notion is beginning to grow on us, and I would like to have been able to say more about it in this paper. Orr writes of such dialogue on pp. 90-91 of *Ecological Literacy*. Like human conversation, he says, dialogue with the more-than-human cannot be dominating — it begins with the acknowledgement of the existence and interests of the other. Its terms must be accurate, not loaded (like "resource," "management," and so on). It must be unhurried; it has form, structure, and purpose. See also Jim Cheney, "Postmodern Environmental Ethics: Ethics as Bioregional Narrative," *Environmental Ethics* 11 (1989), pp. 117-134, and Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," in *Simians, Cyborgs, and Women: The Reinvention of Nature* (NY: Routledge, 1991).

Wolves, Ethics, and Education: Looking at Ethics and Education through *The Yukon Wolf Conservation and Management Plan*

Bob Jickling, Yukon College

My story about wolves, ethics, and education goes back to the early 1980s when, as a school teacher in Whitehorse, I had to examine my role in the midst of a controversy about wolves. The Yukon Government had initiated a wolf control program and was also considering culling grizzly bears. As a teacher, I wanted my students to get involved in the issue; participate in the debate. However passionately that I felt about this issue, I was troubled deeply by the lack of philosophical guidance and apparent curricular options. I also knew that everyday I faced a class comprised of individuals with different cultural backgrounds and values, and who had parents who supported the activities about which I was so skeptical.

I looked for inspiration in the existing environmental education materials available and found none satisfactory. While many of these, including a locally developed package, spoke eloquently about addressing questions concerning values, none presented activities with any real promise of achieving this goal. I was disappointed and frustrated. I was also unsatisfied by my lack of understanding about what environmental education was, and could be. Within two years I had begun a Ph.D. program and a journey which has led me to this topic today. And, yes, the topic remains frustratingly difficult.

While that wolf-kill was soon stopped, issues surrounding wolves, and wolf control programs have remained controversial in the Yukon. Systematic removal of wolves is not new; it is part of our history. For the past three years the Yukon Government has again been responsible for a controversial wolf-kill program. However, this tradition is being challenged as public values change.

The first biologist hired for the Yukon in the 1950s was given the task of overseeing a widespread wolf poisoning program. The scale and methods of this program would be unthinkable by today's standards.[1] Whereas public norms had, in earlier times, unquestionably relegated the wolf to the status of vermin, this is no longer the case. Many citizens now recognise that wolves are integral to a fully functioning ecosystem, and themselves subjects of inherent and/or intrinsic value. There appears to be growing respect for wolves and intolerance for past management practices.

Occasionally we are provided with opportunities which give us the glue we need to cement new ideas. For me, I was asked in 1992 to participate in the writing of *The Yukon Wolf Conservation and Management Plan*.[2] Faced with demands to initiate this most recent wolf control program, the Yukon Department of Renewable Resources recognized that management today must be comprehensive, proactive and inclusive of a conservation strategy to protect long term interests of species. With this in mind they assembled a broadly representative citizen's group to develop a plan for "wolf conservation and management" (or possibly one day "management regarding wolves," or . . .).

This was a task which I agreed to with some trepidation. I was ever conscious of Socrates's refusal to become involved in politics because of the inevitable compromises required. The tension between preparing a useful document while avoiding being compromised, required me to think a great deal about the nature of ethics. It also provided some clues about how I might think about relationships between ethics and education.

In what follows I will talk about ethics and discuss two ways of thinking about them — "ethics as code"[3] and "ethics as process." Then I will return to *The Yukon Wolf Conservation and Management Plan* which, seen heuristically, can further enable understandings of ethics and their implications for education.

Ethics

When Aldo Leopold described his idealized journey from the ethics of Odysseus's era towards a "land ethic," he was using "ethics" in a particular way.[4] In this instance he was talking about social mores, or the customs and conventions of a broad social group. He was also speculating about the evolutionary nature of these social mores. In hanging a dozen errant slave-girls, Odysseus was ridding himself of property in an expedient way. Disposing of human chattels was widely accepted in Ithacan society. Leopold's use of the term "ethics" refers to the unwritten code, or social mores, of a particular society at a particular time. He notes, however, that ethical criteria have, since Odysseus, been extended to many fields of conduct. Leopold contends that ethics are not static but evolving and that they

ERIC Full Text Provided by ERIC

may one day be inclusive of respect for, and duties toward, the land. His sense of ethics in this vignette is *descriptive* of social codes and his predictions are based on observations of the evolutionary tendencies of such codes.

"Ethics" is also associated with a *process* for investigating and evaluating issues. Leopold's usage, for example, is quite different from the "ethics" of Peter Singer who advances ideas about animal liberation.[5] Singer's interest is in developing disinterested and rationally defensible moral theory and then seeking to understand how this theory may be applied to contemporary issues. In this sense ethics is not a description of a society's moral code but a process for carefully considering what might constitute a "good" state of affairs or better practice. In Singer's case he is concerned to show how principles of non-maleficence might be extended to sentient animals and applied in particular instances. There are, of course, others who have developed moral theories based on different premises including concerns for biodiversity, rights, ecocentrism, and aesthetics.

Eugene Hargrove, founding editor of the journal *Environmental Ethics*, argues that environmental ethics is broader still than just moral theorizing and application.[6] He maintains that this field also addresses aspects of aesthetics, metaphysics, epistemology, philosophy of science, and social and political philosophy. In this sense environmental ethics is equivalent to environmental philosophy. This usage, like that of Singer's, stands against that of Leopold's and reflects a view that environmental ethics essentially concerns a philosophical process for thinking about issues and considering what to do in particular instances.

Yet others, such as Jim Cheney[7] and Karen Warren[8] argue for subjectivist and contextual epistemologies. According to their understanding of ethics, what constitutes "good" will be non-objective and shaped by geography and historical experience. Narrative, or storytelling, is seen as an important resource to environmental ethics. What unites the work of these authors is that they are all engaged in a process of inquiry. And, the ensuing conversations between them can be challenging and creative. Ethics can thus be seen as an open-ended process with potential to expose new challenges and generate new possibilities.

As these examples illustrate, "ethics" is a difficult term in that it can have multiple meanings. However, they also suggest a framework for considering the nature and implications of "ethics" in practice. Wildlife management, which implicitly or purposefully aims to reflect contemporary values, embodies a conception that can be termed "ethics as code." Practices which are more inclined to encourage careful examination of various value positions can be said to embody the term "ethics as process." With this framework as background, the educative potential of these approaches to practice can be considered (see the first column of Figure 1).

Environmental Ethics	Community Learning Possibilities	The Yukon Wolf Conservation and Management Plan
Ethics as code Reflection of customs and conventions of a broad social group.	**Socialising** Inculcating or reinforcing customs, conventions, and/or social norms.	**Respect for wolves** Wolf conservation areas. Interpretive opportunities. Hunting season shortened and bag limits introduced.
Ethics as process Process of philosophical inquiry into issues concerning human/environment relations	**Educating** Enabling participants to: think about, rather than simply accepting, present norms, to think about contentious issues, to examine new possibilities, to accept/reject past standards based on careful considerations.	**Provisions considered** Inherent/existence values. Values concerning species and future generations. Instrumental values. Foster conversation between these competing priorities.

Figure 1. A framework for relating ethics to management practices and community learning possibilities.

Ethics as code

Many attractive environmental projects are rooted in particular values. Often such projects seem fair and appropriate; we tend to want to inculcate values concerned with general respect for the environment, willingness to mitigate damage and minimize harm. In practice we could be talking about saving endangered species, pollution testing, recycling, or site restoration. While these projects are conducted "for" the environment they imply acceptance of particular norms or social codes (see the second column of Figure 1).

There are values which are clearly more controversial. Many who are concerned about environmental, feminist, social, and development issues see much of what is considered socially acceptable to be the problem. We sometimes say that the hidden agenda embedded in management decisions really serves the interests of the economically powerful, the developers, the elite, or the management hierarchy. We may also see values which favour resourcism, or unsustainable use embedded in management policies.[9] This illustrates the limitations and the more pernicious side of "ethics as code."

"Ethics as code" tends to have reproductive roles in social life. Their prescriptions, and those values that inform them, tend to be taken-for-granted, authoritative, and applicable in a range of contexts. While socialization processes can accelerate social change, in cases such as the introduction of metrification and more gender fair language, they can also tend to reinforce existing power relationships. In the language of schooling and education, exercises and projects which reflect such codes tend to socialize rather than educate in that they inculcate and reinforce existing social norms. Important social values are uncritiqued and often masked in the circumstances of their application.

Ethics as process

We can also think of "ethics" as being associated with a process for investigating and evaluating issues. "Ethics" in this sense involves seeking principles to guide moral behaviour and evaluating their application in particular instances. To allow engagement in "ethics as process," planners, managers, and educators must first recognize that many values, sometimes contested, exist within a complex community and that these values may be weighted differently from community to community and from time to time. An increasingly critical public will eventually demand this recognition.

When engaged in "ethics as a process" participants will seek to identify existing values such that they can be examined and evaluated. This can be a first step for any group which is grappling, in a substantial way, with value laden issues. In this way, participants are thinking about, rather than simply accepting values. And, in doing so they are engaged in the intellectual work of an educative activity as distinct from deferring to socialising processes which limit options to those which conform to pre-existing norms.[10] It is through such a process that managers and citizens can examine new possibilities, and accept or reject past standards. And, it is through such a process that potential for social change can be created (see Figure 1).

There is, of course, tension between implementing codified ethics and processes which tend to question these codes. Often, it is precisely this tension which provides our society with the raw material for an important conversation about what is good and how we should live. While we may one day have developed a moral theory which will provide a framework for guiding appropriate environmental behaviour, this does not appear to be presently the case. As Anthony Weston suggests, environmental ethics is in its originary stage and we cannot predict in advance where the process of moral change will take us.[11] For this reason environmental ethics should be a creative, open-ended, process. It must resist temptations to reflect particular stances (codes), even those appearing to be the most enlightened. If wildlife managers, educators, and citizens are to participate in the unfolding of environmental ethics then policies must acknowledge the need to deeply question values. They will only do this when they prepare the ground for environmental ethics in its second sense: "ethics as a process of inquiry."

To help understand how some of these concepts can be applied in real situations, I will now discuss *The Yukon Wolf Conservation and Management Plan* to illustrate these two understandings of "ethics" and to discuss further how they may contribute to thinking about education.

The Yukon Wolf Conservation and Management Plan

The composition of the wolf conservation and management planning team was diverse, and conceptions about human/environment relationships varied. However, there were points about which everyone could broadly agree. In particular, the planning team adopted a view that wolves should be respected. While ideas of "respect" appeared to vary, there was sufficient agreement to allow for the development of recommendations which reflected this value. These included establishing wolf conservation areas, developing interpretive opportunities about wolves, reducing the wolf hunting season, and introducing a bag limit for wolves and the need to protect habitat of prey species (see the third column of Figure 1).

The "ethics" underlying these recommendations are descriptive. They represent and reinforce an existing code. In this sense the community learning effect will tend towards socialising rather than educating.[12] Of course, activities such as wolf-interpretation will not simply involve mindless inculcation of codes; such programs will also include much of educative value. However, in each of these examples the underlying premise is that wolves are valued and the broad acceptance of this moral code is reinforced through implementation of the recommendations. It is interesting to note, following Leopold, how moral codes concerning wolves appear to have evolved over the last forty years.

While some elements of *The Plan* reflect current social values, others acknowledge a more contentious debate about human/wolf relationships. It would be impossible to gain consensus about conducting wolf-kills from a representative sample of Yukon residents; the collective social mores would neither affirm nor reject the proposition. Further, imposition of one set of values to the exclusion of others would have resulted in a document having little public confidence; it would have been untenable. Similarly, as ideas about environmental ethics are dynamic and developing, it is impossible to provide any universal formula for resolving environmental disputes concerning wolves. Appropriate actions appear to be time and context dependent, as values are actively examined, challenged, and evaluated. A simple prescription would quickly become obsolete.

Rather than trivialising the decision making process, *The Yukon Wolf Conservation and Management Plan* provides a context for discussion and a broad framework from which to encourage "ethics as process." It recognises and identifies the existence of disparate social views and expects that they all be considered. For example, wolf-kills can be considered when a geographically separate population of ungulates (moose and caribou are typically the species which generate most concern) is threatened with local extinction, or when ungulate populations are declining or low and conservation measures are applied. These considerations should, however, be juxtaposed against *The Plan*'s principles which state that "inherent/existence[13] values of wolves will be considered." There is no clear or simple answer.

In addition to preventing indiscriminate wolf-kills (reflecting an emerging code), these provisions also point to clusters of more contentious values associated with wolf issues. These include "use" or instrumental values held by recreational and subsistence hunters, and which allow for consideration of wolf culling in response to low ungulate numbers. Additionally, First Nations' cultural values are frequently associated with practices of subsistence use. Concern for extinctions of ungulate populations reflects a collection of values often expressed as obligations to future generations to preserve species, genetic diversity, and biodiversity. Recognition of inherent/existence values is identified as a matter of principle and speaks directly to non-instrumental values concerning wolves. These might include aesthetic, cultural and spiritual values. While there has been some criticism that *The Plan* does not specifically mention "intrinsic" values,[14] it does tend to provide general directions which should encourage discussion inclusive of ideas about intrinsic values.

The Plan neither gives nor denies the Yukon Government approval to engage in wolf control. Presently there is debate in the Yukon. Are needs and wants of people who hunt moose and caribou more important than inherent/existence values of wolves? How should preservation of First Nation cultural contact with caribou herds be measured against growing respect for wolves and perceived failures of past management practices? These questions represent just a few dimensions of a complex issue. However, any decision still requires an accounting for why one set of values should be weighed more favourably than another. Fulfilling this obligation should encourage discussion in a society with dynamic and contested values; environmental ethics should be a thoughtful process concerned with introspection, exploration of possibilities, and evaluating claims. Decisions based on careful consideration of these provisions will, I believe, be better informed, more inclusive, more carefully justified, and more ethically considerate than those otherwise made. Ultimately, such decisions will have an impact on standards of care, and views about these standards will change over time. But, the existence of *The Yukon Wolf Conservation and Management Plan* does not guarantee this will be the case.

Fair implementation of such a plan will also be affected by the political climate, attitudes amongst wildlife professionals, and resource agency/-community power relationships. However, *The Plan* does provide: a gauge of public attitudes and an acknowledgment that values have changed, parameters for debate, a vehicle for critiquing practices, legitimacy of contesting values, and access to ethical

ERIC

dimensions of social issues. According to the extent to which these provisions are used, it can also serve an educative role. By stimulating broad community discussion about value claims, Yukon citizens will be engaged in the educative "ethics as process." Unlike "ethics as code," "ethics as process" is itself educative; to undertake "ethics as process" is to become better informed about the debate surrounding philosophical dimensions of the issue in question. "Ethics as process", then, is not only important for gaining a more complete picture of (in this case) wildlife management; it also coheres with important aims of environmental education itself, namely to inform critical debate about environmental issues.

For those concerned more specifically with schooling, *The Yukon Wolf Conservation and Management Plan* reveals several possibilities. First, just as this paper has attempted to identify values embedded in one policy statement, so might students and teachers probe this and other policies for themselves. As Neil Evernden once reported, the real authorities in one's society are unquestioned assumptions.[15] By examining the "texts" which reflect values and shape decisions, students can begin to examine for themselves those social codes which affect activities in their communities. This can lead to further questions. What are the stated values? What values are implicit? Do the details of policies support or reinforce the stated values? Similarly, students can begin to examine other "texts" which occupy important roles in their society. What, for example, are the values embedded in their textbooks, their curricula? And, do these documents tend to reinforce existing social codes or can they enable students to participate in the continued evolution of environmental ethics?

Second, the two meanings of "ethics" suggested in this examination of *The Yukon Wolf Conservation and Management Plan* parallel schooling practices. Ethics as a reflection of broad social values or unwritten codes are reinforced through socializing activities that take place in schools. School recycling programs or campaigns to save endangered species and a host of other activities can tend to reinforce emerging codes, heighten interest in environmental issues, and "enable environmental practice."[16] *The Plan* suggests that ethics should also be thought of as a process of inquiry which parallels more educative activities in schools. By revealing the nature of contested ethical positions, *The Plan* acknowledges the need to ask deeper questions about what might be the root cause of environmental "problems"[17] and how an environmentally responsible citizen should act in a particular context at a particular time.

As Eugene Hargrove has said, "ultimately, the form environmental ethics takes in any particular place on this planet will be determined by those who use it."[18] For the student, the more educative activities will be those which enable them to engage in environmental ethics as a process for thinking about contentious issues — to "do ethics," to "practice ethics." Students will be extended — encouraged to think critically about even the most environmentally enlightened practices of the day. They will be equipped to transcend the most creative approaches available at present. To do this they will need to hear a variety of theories, or stories, and from them learn to critique old standards and be encouraged to create new possibilities.

Notes on contributor

Bob Jickling teaches environmental philosophy and environmental education at Yukon College. He is also a member of the North American Commission for Environmental Education Research and is the editor of the *Canadian Journal of Environmental Education*. Canoeing Yukon rivers and skiing Yukon trails are his passions.

Notes and references

[1] Scott Gilbert, "Science, ethics and ecosystems," in Juri Peepre & Bob Jickling, eds., *Northern protected areas and wilderness* (Whitehorse: Canadian Parks and Wilderness Society - Yukon & Yukon College, 1994), pp. 195-201.

[2] Wolf Management Planning Team, *The Yukon wolf conservation and management plan* (Whitehorse, Yukon: Yukon Department of Renewable Resources, 1992).

[3] In this sense, I am speaking about implicit or unwritten codes. Interpretations of these codes can also be formalized and expressed as written codes of conduct or standards for practice.

[4] Aldo Leopold, *A Sand County almanac* (Oxford: Oxford University Press, 1949).

[5] Peter Singer, *Animal liberation* 2nd ed. (New York: Avon Books, 1991).

[6] Eugene C. Hargrove, *Foundations of environmental ethics* (Englewood Cliffs, New Jersey: Prentice Hall, 1989).

[7] Jim Cheney, "Postmodern environmental ethics: Ethics a bioregional narrative," in S. J. Armstrong & R. G. Botzler, eds., *Environmental ethics: Divergence and convergence* (New York: McGraw-Hill, 1993), pp. 86-95.

[8] Karen Warren, "The power and promise of ecological feminism," *Environmental Ethics*, 12 (1990):125-146.

[9] For a recent example of this concern see John Livingston's *Rogue primate: An exploration of human domestication* (Toronto: Key Porter Books, 1994).

[10] I am not suggesting that educational activities are somehow value free or neutral. We as educators can, however, can be self-conscious of our biases in our attempts to be fair minded and tolerant of alternative views. This should not, in turn, be construed as relativistic, but rather as a

willingness to thoughtfully consider, and weigh, alternative perspectives.

[11] Anthony Weston, "Before environmental ethics," *Environmental Ethics*, 14 (1992):321-338.

[12] For treatments of distinctions between education and socialisation see Robin Barrow, *The philosophy of schooling* (Brighton, Sussex: Wheatsheaf, 1981) and Kieran Egan, "Education and socializing: A proper distinction?" *Teachers College Record*, 85 (1983):27-42.

[13] Armstrong and Botzler, *Environmental ethics: Divergence and convergence* (New York: McGraw-Hill, 1993), describe an emerging distinction between inherent and intrinsic value. The "inherent value" in this paper, and in *The Yukon Wolf Conservation and Management Plan*, is used more generally and should be considered in terms of the general direction to which it points. In this sense it directs us to think also of "intrinsic value" and is reminiscent of the period in literature when "intrinsic" and "inherent" were used more loosely and perhaps interchangeably.

[15] Neil Evernden, *The natural alien: Humankind and the environment* (Toronto: University of Toronto Press, 1985).

[16] Weston, "Before environmental ethics."

[17] For a further exploration of this idea see my "Environmental education, problem solving, and some humility please," *The Trumpeter*, 8 (1991):153-155.

[18] Eugene C. Hargrove, "Science, ethics and the care of ecosystems," in Juri Peepre & Bob Jickling, eds., *Northern protected areas and wilderness* (Whitehorse: Canadian Parks and Wilderness Society - Yukon & Yukon College, 1994), pp. 44-45.

Directions for the Future: Environmental Education in British Columbia

Richard Kool, British Columbia Ministry of Environment, Lands and Parks

Living in the realm of the practical and real, I wonder as an environmental educator working within a governmental regime, how I can help move this weird field along.

British Columbia is a province with a great deal of environmental interest and a great deal of environmental polarization, a place where the largest act of civil disobedience ever seen in Canada was played out a few years ago at the start of a logging road going into Clayoquot Sound on the west coast of Vancouver Island. It is also a place where, in some communities, teachers take a serious risk in looking too "green." It is a place whose history is closely tied with mythic struggles involving humans and the environment. The First Nations peoples arriving some time around 10,000 BP found a place of immense natural wealth, a place rich enough to support what some archaeologists believe to be about 1/3 of all aboriginal peoples in North America prior to European arrival. The first Europeans, when they arrived just more than 200 years ago, also appreciated the vast natural wealth. There were trees so tall it took two people to see to the top (one person looked up as far as they could see, and the next person started from there and got to see the top); rivers so rich in salmon that you could walk on their backs from one side to the other; coal, gold and other minerals in inexhaustible abundance, fertile bottom land; vast potential for hydroelectric power, and more.

And now, in only 200 years of non-aboriginal occupation, a great deal of that natural wealth has been used up. Now, as we are here thinking, a vast practical problem of environmental ethics is being sorted out as Canada and the United States, and in particular Alaska and Washington State, struggle over who gets how much of whose salmon. Just a few years ago, 800 people were willing to go to jail over an issue of environmental ethics at Clayoquot. The struggle over who will get the last old-growth tree, the last free-swimming salmon, the last cup of water from depleted reservoirs, the last breath of clean air in the Vancouver area, these issues are not too far away. BC is a place where the vice-president of the BC Business Council could berate a group of environmental educators and others for forgetting that business creates the wealth of British Columbia. When told, after his outburst, that the wealth of BC is daily created by the sun, and left to us by residue of geological activity, he responded with "I never thought of it that way." He didn't learn that in Business School, and people like him are the ones making decisions not only in BC, but all over the world.

Environmental education has been carried on in Canada and British Columbia since the early 1970s. In 1972, the British Columbia Teachers Federation commissioned a task force to examine environmental education. The recommendations made by this group 20 years ago included considering the built as well as the natural environment, the integration of environmental education within the existing curricula, and the value of out-of-school experience in both natural and built environments. Since then many school districts have actively supported environmental education, committing significant amounts of dollars and staff to create exemplary programs. Individual teachers in British Columbia have been recognized nationally and internationally for their contribution to the field of environmental education. The three British Columbia universities have had environmental education offerings in their catalogues for more than 20 years.

Within the realm of public education in British Columbia today and in the past, environmental education has not been a mandated course of studies. While many teachers provide some kind of environmental education, principally in the primary program, environmental education at the intermediate and secondary program is found only within the realm of locally-developed courses. There are environmentally-related courses such as "environmental biochemistry 12," "environmental studies 9 - 12," "outdoor skills 11 and 12," "environmental consciousness 9 and 10," "environmental education 8 - 10," "environmental science 8 - 11," "forest and wildlife management 8 and 9," and "forest ecology 11." Environmental education however has previously lacked a legitimacy through its exclusion from the ministry-set curriculum, depending as it has on the initiative of individual teachers and supportive principals and superintendents.

A survey carried out in 1990 by the Environmental Educators Provincial Specialist Association (EEPSA), a group associated with the BC Teachers Federation, gives some indication of the state of environmental education in British Columbia. This PSA, which has less than 150 teachers in its membership, represents the interests of the formal environmental education community.

Their survey of school districts indicated that less than 20% of school districts had environmental education policies, philosophies, an environmental education committee or an environmental education coordinator. Considering that 68% of the districts responded, the actual number may be even lower than reported.[1]

In 1991, a small group of civil servants were charged with the task of putting together a vision statement for environmental education in BC. The Ministry of Education did not have a strong commitment to environmental education, and clearly had no intention of creating any formal mandate for teaching environmental education, but had to respond to the growing public interest in the environment. Through readings, roundtable discussions throughout the province, discussions with academics and practitioners, a draft vision document was released.

We took a great deal of advice from Milt McClaren's widely reprinted paper on environmental literacy.[2] Our document also embraced the conception that E.F. Shumacher wrote about in *A Guide for the Perplexed*:[3] One way of looking at the world as a whole is by means of a map, that is to say, some sort of plan or outline that shows where various things are to be found — not all things, of course, for that would make the map as big as the world, but the things that are most prominent, most important for orientation — outstanding landmarks, as it were, which you cannot miss, or if you do miss them, you will be left in total perplexity.

What were our landmarks? There were four, and they reflect directly from the doctoral work of our host, Bob Jickling, who, writing about what it means to "think environmentally," pointed out that there are four areas of knowing: ecology/science, history, aesthetics and ethics.[4] We spun these out into a series of landmarks for environmental education.

Landmark 1: Understandings about complex systems

Within the realm of the sciences, a basic involvement with the following concepts are necessary:

- Thermodynamics
- Cycles, Flows and Fluctuations — energy and matter
- Population concepts, including limiting factors and carrying capacity
- Interactions, interdependence and coevolution
- Communities and Ecosystems
- Diversity
- Change, Succession, and Homeostasis
- Impact of biota on physical environment (past and present)

Closely related to the scientific subjects are the understandings that relate to the workings of complex systems and systems thinking, of which human society and the natural world are two large examples. Complex systems thinking brings us to a more global way of looking at things. Environmentally educated citizens must be able to think globally, and to understand the nature of global linkages and feedback systems. The fundamental ideas of sustainability relate to the understandings of complex systems; citizens need the knowledge necessary to understand the relationships between economic, environmental and social systems.

Landmark 2: Understandings of the past and the future

Twenty-five years ago, the historian Lynn White published a now-classic paper entitled "The Historical Roots of our Ecological Crisis."[5] In that paper, he attempted to demonstrate that it has been the interpretation of the Book of Genesis that sits at the root cause of the environmental crisis. While White's thesis has spawned much discussion and is by no means a universally accepted analysis, the point is that one has to understand the past in order to make sense of the present. A student's knowledge of the issues of today and tomorrow has to be grounded in historical understandings. Understandings of how past societies have looked upon their place in the world and the impact of past societies on environments are a critical component of the knowledge of an environmentally educated citizen.

John Huckle puts it this way:

> The study of environmental history should develop pupils understanding of changing social formations and their use of nature. Pupils should understand how the transformation of nature allows social development, how human environments are socially constructed and how social relations shape environmental relations.[6]

How other peoples today, in particular non-European cultures including the variety of aboriginal peoples of the world, maintain different conceptions of the place of humans in the world is knowledge important to the educated citizen. Understandings from these other cultural conceptions are a necessary component of the environmentally educated citizen's "toolkit."

Concepts surrounding the use of nature through time also lead naturally into examination of ecologically and socially sustainable development as a possible model for present and future economic systems. The relationship between environment, economy and society are direct outgrowths of our historical conceptions and understandings of our place in the environment. Understanding the various human conceptions of and use of natural resources, and their historical roots, is a major part of our historical landmark.

Landmark 3: Understandings of philosophy and ethics

An environmentally educated citizen has knowledge of the physical world. But there is also a philosophical and ethical component to being a responsible citizen. The reality of environmental activism today is driven as much by concern for philosophy as for photosynthesis.

The philosophical "toolkit" of an ecologically-literate person must contain an understanding of the present world-view. This kind of knowledge is important to make sense out of the present-day situation, and to be able to understand the mainstream perspective of today's Western culture. As well, the new and emerging world-views need to be examined, and the critique of the traditional Western perspective needs to be understood.

Above all, there must be a thorough examination of values and valuing. To Fritjof Capra,[7] ecological values include moving our concerns:

- from independence to interdependence
- from competition to cooperation
- from quantity to quality
- from expansion to conservation
- from domination to partnership

The environmentally educated citizen will have an understanding of the present value systems, of alternative value systems including those of aboriginal peoples as they relate to the environment, and have sufficient confidence in their ability to act according to their values based on their knowledge of the issues.

Landmark 4: Aesthetic/spiritual

For many, the essential nature of today's environmental "crisis" is of a spiritual rather than a scientific nature. Spiritual and aesthetic understandings are different from those of science, history or philosophy. These kinds of understandings are not exclusive domains of a particular religion, but are probably at the base of all religious experience. Here, we are examining the other not-necessarily rational ways of knowing — the non-rational or super-rational means of knowing — those of "intuition, insight, deep familiarity, respect, compassion."[8] To these terms we might add the general realm of transcendence and transformation through the appreciation and perception of the sacred in the world.

Perhaps the easiest and most acceptable way to describe this landmark is that it encompasses the sense of wonder that grows out of experience in the natural world. This wonder at what we cannot begin to understand acts as a balance to the scientific/utilitarian understandings which result from our experiences with some of the other landmarks. The particular educational messages that fall within this landmark are going to come from a variety of cultural understandings. Most relevant to us, however, will be the wisdom contained within the traditional teachings of the First Peoples of British Columbia.

Environmental concepts in the classroom

The vision document and others that have followed it have floated around BC and elsewhere, preparatory to the development of a formal Ministry document. Over the past two years the Ministry of Education has been developing their position around environmental education, and during the last week of October released their document *Environmental Concepts in the Classroom: A guide for teachers.*[9] There are problems with this document: we're not always talking about "the classroom," for one.

Environmental Concepts in the Classroom: A guide for teachers isn't a curriculum document; teachers don't have to teach environmental education. But its importance is clear. First, and most important, it gives permission to teachers who might have wanted to approach environmental education, but really couldn't find any formal authorization for doing it in any Ministry documents; it does provide a legitimacy to teach environmental education and that is not something to be overlooked. This document isn't for the "early adopters" — those teachers who have been teaching environmental education in spite of its questionable curricular legitimacy. But it will be of great value to the slightly more timid who want more authorization before they go ahead.

Second, you only have to take a look at other Canadian or American curriculum documents around environmental education to see the importance of this paper. It appears to me that for many jurisdictions, true environmental education is a scary business. Most opt for a version of environmental science, with a strong emphasis on ecology. Ecology is not environmental education; it is necessary, but not sufficient. Some curricula talk a bit about action skills, but leave much of the underlying values and philosophy alone.

The *Environmental Concepts in the Classroom* document is a short one as Ministry of Education documents go: only 20 pages long. But it lays out for teachers, too tersely at times perhaps, the guiding principles we should be using in our practice. These principles go beyond ecology and environmental studies and give the lead to teachers as to the legitimacy of using environmental education as a truly integrative educational practice.

The first principle presented is "Direct experience is the basis of learning." This statement gives permission to teachers to use the outdoor classrooms, the field trips to nature centres and forests or streams or seashores, as legitimate and important parts of the school program. Want to learn about streams? — give your children the direct experience of working in and around a stream. As you walk into the Marine Biology Laboratory at the Woods Hole Oceanographic Institution at Woods Hole, Mass. — a place that I spent much time in as a kid and as an undergraduate — there is a brass plaque, a statement by the founder of the Laboratory, Louis Aggassiz. It says "Study Nature, Not Books." Aggassiz, a great educator of the 19th century, would have liked this first principle.

The second principle talks about responsible action: "Responsible action is integral to and a consequence of environmental education." This is a subject close to my heart. There is, I believe, a weight that comes along with knowing things, a responsibility to act in accordance with one's understandings. Student action projects have to be carefully thought out and sensitively directed. And yet, the mark of a responsible citizen is taking thoughtful action in the world, action that comes as a result of honest investigation and inquiry, reflective of the integrity of the individual. Alfred North Whitehead starts the *Aims of Education* with the lines: "Culture is receptiveness to beauty and humane thought. Scraps of information have nothing to do with it. A merely well-informed man is the most useless bore on God's earth."[10] Whitehead tells us that we have to do something with our knowledge. This document gives legitimacy to responsible student action. Many of the new Learning Resources we're now creating in the BC Ministry of Environment, Lands and Parks are strongly connected to action projects.

How do you decide on what is responsible? You have to have some understanding of the range of ethical stances that are available. This ranges from Old Testament dicta such as "love your neighbor as yourself" to Immanuel Kant's categorical imperative which tells us to treat other humans only as ends and never as means, to the deep ecologists position of strong identification with nature. The new document gives us permission and encouragement to consider our ethical stances, and especially consider them in relation to their impact on the environment. The third principle states that "The study of the environment enables students to develop an environmental ethic." What we think and what we do have real implications for the fate of the planet, and we now have direction to consider them within our classrooms.

The document tells us in another principle that "Human decisions and actions have environmental consequences." Here we have the opportunity to look at environmental history, both close-term and going back to ancient times. How can we understand the problems of today without understanding the historical trajectory our culture, or any other culture, has been on. Human decisions taken more than 2000 years ago led Plato to bemoan the deforestation of the southern Greece. The cedars of Lebanon, so poetically described in Scripture, are no longer. The great oak forests of Great Britain have long been felled, the results of human decisions. The ozone holes, the reduction of global biodiversity, the collapse of the cod stocks, the rise of CO_2 in the atmosphere, these are all the results of human decisions and in order to understand what is happening and likely to happen, we have to look backwards. The document gives us permission to do that.

Yes, there is science in this document. *Life on earth depends on, and is part of, complex systems.* The study of complex systems is considered integral to environmental education, yet here we are told that it is more than just ecology: it is economics, it is political science and sociology and law that also need to be understood from an environmental perspective. We need to study both natural systems and human-created systems, systems of society and economy, in order to fulfill our role as responsible citizens working towards sustainability in our lives, our society, our economies, and the environment that we share with all creatures.

And finally, and perhaps most radically, the document links the work of environmental education from environmental awareness to aesthetic appreciation: "Environmental awareness enables students to develop an aesthetic appreciation of the environment." Through direct experience with the natural world, we can develop an understanding that comes about through identification with the beauty and wonder we experience. For the fine arts teacher, this document gives an opportunity to connect with a science or social studies teacher doing work in the outdoors. It provides an opportunity to link the role of painting and painters with the ways in which we see the world and thus how we value the world. Soundscapes, and compositions like Srul Irving Glick's nature piece set around a lake in Banff, these can all become and should become part of what we do in environmental education.

With this new document, I am more hopeful about what environmental education can be in BC schools, but it is not curriculum. What is environmental education in most schools in BC? The report that I can give is only anecdotal. But it is clear that the major area where teachers deal with environmental education is in the science curriculum. Environmental education is really seen by many as a subset of the science curriculum, and is presented to a great degree as a variant on environmental studies. Students learn about ecology, but the curriculum presents a highly technical bias to the students. For example, there is a new Science K-7 curriculum in BC, just released. We can look at the grades 5 and 7 curriculum to see what we have to work with. It is clear, for example, that ethics are not a large part of what is discussed in this new curriculum. In fact, ethics — the theme of this conference — are not really part of any curriculum in BC.

What is driving teachers today? The new curriculum documents, the Integrated Resource Packages (IRP), are setting out what the law of the land in BC education is today. If we are to make some impact on what happens in schools, we are going to have to tie whatever we do to the IRP even if we have an environmental education framework document. We have to use the IRP, for better of worse, to provide for us curricular space where we can act.

We have to be careful, as environmental education evangelists, about pushing too hard on the teaching community. We clearly can't tell teachers that they should teach environmental education, because some of us in government outside of the Education Ministry think that they should. Peter Marris points out a failure that many of us are guilty of:

> When those who have power to manipulate changes act as if they have only to explain, and when their explanations are not at once accepted, shrug off opposition as ignorance or prejudice, they express a profound contempt for the meaning of lives other than their own. For the reformers have already assimilated these changes to their purposes, and worked out a reformulation which makes sense to them, perhaps through months or years of analysis and debate. If they deny others the chance to do the same, they treat them as puppets dangling by the threads of their own conceptions.[11]

We know from 25 years of research[12] that the things that really encourage students to learn and grow is what happens when the teachers close the door of the classroom — not what comes out of central government offices. In order to help teachers and students, we have to be able to help teachers do what they do when they close the doors. And if we're interested in environmental education and ethics, we've got to help them learn about what that means and provide them with encouragement to teach this when they close the doors of the classroom.

The last part of the *Environmental Concepts in the Classroom* document is called "Suggested guidelines for implementation," and it lays out some ideas that David Denning and I put together a few years ago. Some of these guidelines are that:

- *Environmental Education needs to consider integration of traditional subjects.* Walt Whitman once wrote that "The world will be jagged and broken to those men and women whose lives are jagged and broken. The world will be whole and together to those men and women whose lives are whole and together." Curriculum integration, which sits at the heart of good, brings peoples lives together.
- *Presentation of a range of perspectives.* We dropped the word balance, feeling that balance implies that there are lunatics on either end of the spectrum and the truth lives in the middle. We do not often know where the truth is, but do feel that an educator cannot simply present one kind of analysis or answer — especially in areas of contentious knowledge — as if it were the only one to be considered. The mark of an educated person is the ability to critically consider a range of perspectives.
- *Hopefulness* is another guideline. We first talked about optimism, but the dictionary definition of optimism refers to the belief that

everything will turn out for the best. That is perhaps a bit too "pollyanna-ish." Things may not turn out for the best. But as educators, we have to operate on a paradigm that is based on hope — hope for ourselves, hope for our students, hope for life on earth. But this hope has to be tied, of course, to action.

- And finally, *humility*. There is much we don't know, don't understand, and may never understand. In the face of the challenges in front of us, and when we see the faces of our students who are that part of our trajectory into the future — we must be humble.

Notes on contributor

Richard Kool is the environmental education coordinator in the British Columbia Ministry of Environment, Lands and Parks. He has been involved in the educational world as a secondary school science and environmental education teacher, college and university insructor, and for many years as an educator/interpretor/programmer at the Royal British Columbia Museum. He is struggling to complete his doctorate in educational leadership at Brigham Young University at the same time that he approaches his dotage. Extracurricular activities involve trying to make sense of his children's ever-changing lives, trying to get his doctorate before his wife finishes hers, and playing Irish music on his recorder.

Notes and references

[1] S. Blackstaff, S. Crichton, R. Hammill, B. Scott, & C. Taylor, *Environmental Education in British Columbia — a view to the year 2000* (Victoria: BC Ministry of Education & Environmental Educators' Provincial Specialist Association, 1991).

[2] Milton McClaren "Environmental literacy. A critical element of a liberal education for the 21st. Century," *Alces* 25 (1989), pp. 168-171.

[3] E. F. Schumacher, *A Guide for the Perplexed* (New York: Harper & Row, Publishers, 1977), p.7.

[4] R. J. L. Jickling, *Thinking Environmentally: considerations for education and curriculum in the Yukon* (Unpublished PhD thesis, Simon Fraser University, 1991).

[5] Lynn White, "The historical roots of our ecological crisis," *Science* 155 (1967), pp. 1203-1207.

[6] John Huckle, "Education for sustainability: assessing pathways to the future," *Australian Journal of Environmental Education* 7 (1991), pp. 43-62.

[7] Fritjof Capra, *The turning point: science, society, and the rising culture* (New York: Bantam Books, 1983).

[8] See, for example, D. H. Meadows, *Harvesting One Hundredfold: Key concepts and case studies in environmental education* (Nairobi, Kenya: United Nations Environment Programme, 1989).

[9] *Environmental Concepts in the Classroom* (ED 00447) (Victoria: British Columbia Ministry of Education, 1995).

[10] Alfred North Whitehead, *The Aims of Education* (New York: Macmillan, 1929).

[11] P. Marris, *Loss and Change* (New York: Anchor Press/Doubleday 1975), p. 166.

[12] See, for example, M. C. Wang, G. D. Haertel, & H. J. Walberg, "What helps students learn?" *Educational Leadership* January (1994), pp. 74-79.

BEST COPY AVAILA

SE060230

ERIC

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: A Colloquium on Environment, Ethics + Education

Author(s): Edited by Bob Jickling

Corporate Source:

Publication Date: 1996 Yukon College

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant material in the monthly abstract journal of the ERIC system, *Resources in Education* (RI paper copy, and electronic/optical media, and sold through the ERIC Documen given to the source of each document, and, if reproduction release is granted, o

If permission is granted to reproduce and disseminate the identified docum the bottom of the page.

80 Range Road
P.O. Box 2799
Whitehorse, Yukon
CANADA Y1A 5K4

Yukon College

Dr. Bob Jickling
Arts & Science Division
Outdoor and Enviromental Studies
PH. (403) 668-8778
FAX (403) 668-8828
E-Mail: jickling@yknet..yk.ca

With Compliments Bob.

☑ Check here
For Level 1 Release:
Permitting reproduction in microfiche (4" x 6" film) or other ERIC archival media (e.g., electronic or optical) *and* paper copy.

The sample sticker shown below will be affixed to all Level 1 documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
Sample
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Level 1

The

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN OTHER THAN PAPER COPY HAS BEEN GRANTED BY
Sample
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Level 2

☐ Check here
For Level 2 Release:
Permitting reproduction in microfiche (4" x 6" film) or other ERIC archival media (e.g., electronic or optical), but *not* in paper copy.

Documents will be processed as indicated provided reproduction quality permits. If permission to reproduce is granted, but neither box is checked, documents will be processed at Level 1.

"I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic/optical media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries."

Sign here→ please

Signature: R. Jickling

Printed Name/Position/Title: Bob Jickling

Organization/Address:
Yukon College
Box 2799
Whitehorse YT Canada Y1A 5K4

Telephone: 867-668-8778

FAX: 867-668-8828

E-Mail Address: bjickling@yukoncollege.yk.ca

Date: Oct. 6/97

III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, *or*, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:

Address:

Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:

Address:

V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:

ERIC/CSMEE
1929 Kenny Road
Columbus, OH 43210-1080

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

ERIC Processing and Reference Facility
1100 West Street, 2d Floor
Laurel, Maryland 20707-3598

Telephone: 301-497-4080
Toll Free: 800-799-3742
FAX: 301-953-0263
e-mail: ericfac@inet.ed.gov
WWW: http://ericfac.piccard.csc.com