Towards Ecopedagogy: Weaving a Broad-based Pedagogy of Liberation for Animals, Nature, and the Oppressed People of the Earth

Richard Kahn, University of North Dakota

> It is urgent that we assume the duty of fighting for the fundamental ethical principles, like respect for the life of human beings, the life of other animals, the life of birds, the life of rivers and forests. I do not believe in love between men and women, between human beings, if we are not able to love the world. Ecology takes on fundamental importance at the end of the century. It has to be present in any radical, critical or liberationist educational practice. For this reason, it seems to me a lamentable contradiction to engage in progressive, revolutionary discourse and have a practice which negates life. A practice which pollutes the sea, the water, the fields, devastates the forests, destroys the trees, threatens the birds and animals, does violence to the mountains, the cities, to our cultural and historical memories. – Paulo Freire[1]

The Edge of the Abyss: The Dance of Global Capital and Ecological Catastrophe

As we begin the 21st century on Earth, the living inhabitants of the planet stand positioned at the foot a great wave of social crisis and global ecological catastrophe. They are already nearly drowned in an ocean of Post-WWII social transformations, in economies of capital, and in the cultural revolution that has resulted from rapid advances in military science and technology – that which is frequently referred to under the moniker of "globalization."[2] Thus, our moment is new – never before have the collected mass beings of the planet Earth been so thoroughly threatened with extinction as they are now and never before have so many of us raised this problem consciously and desperately together in the hopes of transforming society towards a better, more peaceable kingdom as a result. And yet, the present does not arise in a vacuum, but rather out of the concreteness of history itself. We move, then, in a sea of possibilities and swirling energies. Amidst these energies arises the great wave; and it is crashing and we who are threatened with annihilation and asked to threaten others with the same are its driftwood. Will we then be smashed to splinters upon the polluted beach of no tomorrow? Will we surf the awesome tube of this grave peril and move laterally across it into newly imagined freedoms? Or will we head outward into deeper waters still, floating upon unfathomable depths, along with dangers and possibilities even as of yet unforeseen?

To think and live historically is to be ecological, to move in a bed of context. The anthropologist Gregory Bateson pointed out that the code for understanding the basic ecological unit of survival is "organism plus environment." This relationship – to think ecologically is to think about the relationships between things – declares that a threat to either the organism or its environment is a movement towards the ecology of death: the life process requires *both* and any process that so binds the one or the other so as to threaten "both" is in some sense courting death and moving away from the love of life.[3] Ecologies, then, come in good and bad varieties. There is the sustainable ecology of a cultural commons dwelling in a relationship with a biodiverse habitat and there is the

unsustainable ecology proffered by virtual networks of global investment into corporate industries bent on maximizing profit over people and places. To quote Bateson again, "There is an ecology of bad ideas, just as there is an ecology of weeds."[4] Transnational technocapitalism, as we know it today, has arisen historically as a conscious threat to both organisms and their environment, turning both into little more than "natural resources" for its own assault on a greater rate of surplus value production. It plays the one against the other to their mutual demise and while technocapitalist heroes, such as Bill Gates, imagine a new "friction-free" capitalist world in which services and money are exchanged much like oxygen and carbon-dioxide used to be (and now we have carbon trading credits!), the fact of the matter is that capitalism as we know it rests by definition upon friction. It is predicated first and foremost by competition and growth, a predatory survival of the fittest approach to life in which "fittest" means most mighty and therefore able to grow further and out-compete rivals. There is no ecology of symbiosis in the dominant system today, no ecology of mutuality and compassion; and again, this lack exists not by accident but rather as the result of concrete historical forces at work in our world – many of which have coalesced into a global technocapitalist spectacle during only these last few decades.

In his book, *The Enemy of Nature*, the ecosocialist and activist Joel Kovel begins by documenting the terrible legacy of natural resource degradation that spans the approximately forty years that have now elapsed since the first Earth Day and the release of the Club of Rome's benchmark economic treatise *The Limits to Growth* (1969). Echoing the findings of eminent environmental and ecological groups such as The Union of Concerned Scientists and personages such as the species conservationist Peter Raven, the picture that emerges from Kovel's work is that of an institutionalized, transnational, phase-changing neoliberalism that acts as a cancer upon the Earth, a form of "endless growth" political economy that is literally over-producing and consuming the planet towards death.[5] Wholly without precedent, the human population has nearly doubled during this time period, increasing be nearly 3 billion people. Similarly, markets have continued to worship the gods of efficiency and quantity and refused to conserve. The use and extraction of "fossil fuel" resources like oil, coal, and natural gas – the non-renewable energy stockpiles – followed and exceeded the trends set by the population curve despite many years of warnings about the consequences inherent in their over-use and extraction, and this has led to a corresponding increase in the carbon emissions known to be responsible for global warming.[6]

Likewise, living beings and organic habitats are being culled and destroyed in the name of human production and consumption at staggering rates. Tree consumption for paper products has doubled over the last forty years, resulting in about half of the planet's forests disappearing, while throughout the oceans, global fishing also has doubled resulting in a recent report finding that approximately 90% of the major fish species in the world's oceans have disappeared.[7] Forty mile-long drift nets are routinely used to trawl the ocean bottoms, causing incalculable damage to the ocean ecosystem. Giant biomass nets, with mesh so fine that not even baby fish can escape them, have become the industry standard in commercial fishing and as a result there is expected to be no extant commercial fishery left active in the world by 2048.[8] Further, such nets are commonly drowning and killing about 1000 whales, dolphins, and porpoises daily – some of the very highly sentient species already near extinction from centuries of commercial

hunting – and there has even been a startling move towards the re-introduction of commercial whaling by the International Whaling Commission due to pressure from countries such as Norway, Iceland and Japan.[9] As with forests and oceans, since the end of the 1960's, half of the planet's wetlands have either been filled or drained for development, and nearly half of the Earth's soils have been agriculturally degraded so as not to support life.[10] Finally, as giant corporate agribusinesses have consumed the family farm and as fast food has exploded from being a cultural novelty to a totalizing cultural staple, vast, unimaginable slaughterhouses – brutal production-lines in which thousands of animals are murdered for meat harvesting every hour – have also become the business standard. In his book, *Dominion*, Matthew Scully estimates that nothing less than 103 million pigs, 38 million cows and calves, 250 million turkeys, and 8 billion chickens are slaughtered annually in America alone.[11] When we add to these the numbers of animals that are hunted each year for sport or pelt, those that are killed by global transportation systems and those that are cruelly vivisected and killed in scientific experimentation practices, the numbers magnify by many tens of millions more. All told, then, running alongside the contemporary growth of the world's environmental movement is the red stain of trillions of dead animals – a symbol of the radical amplification of global capitalism that has occurred in our lifetimes.

Almost all of these trends are escalating and most are accelerating. Even during what recently amounted to an economic downturn for many, transnational markets and development continue to flow and evolve, and the globalization of technocapital is fueling yet another vast reconstruction of the myriad planetary political, economic, and socio-cultural forces into a futuristic network society.[12] Over the last four decades, then, humanity has unfolded like a shock wave across the face of the Earth, one which has led to an exponential increase of transnational marketplaces and startling achievements in science and technology, but one which has also had devastating effects upon planetary ecosystems both individually and as a whole. Most telling has been the parallel tendency over this time period toward mass extinction for the great diversity of species deemed non-human, including vast numbers of mammals, birds, reptiles, amphibians and insects. Comparing the numbers involved in this catastrophe with the handful of other great extinctions existing within the prehistoric record has led the esteemed paleo-anthropologist Richard Leakey to coin this age as the time of "the Sixth Extinction," a great vanishing of creatures over the last thirty-odd years such as the planet has not seen during its previous sixty-five million.[13] Mirroring these findings, the United Nations Environment Programme's *GEO-3* report of 2002 found that a vision of continued economic growth and global development akin to that which is now underway is consonant only with planetary extinction and specifically they conclude that: either great changes are made in our global lifestyle now or an irrevocable social and ecological upheavals will grip the world by 2032.

Lest we make the mistake of thinking that our present globalization crisis proceeds along the simple lines of human flourishing and natural resource wasting, then, it cannot be stated strongly enough that even as world gross economic product has nearly tripled since 1970, these gains have been pocketed by a relatively few advanced capitalist nations (and then a smaller class within them still) at the expense of the planet's poor.[14] Recently, the United Nations Development Programme issued its *Human Development Report 1999* which found that the top twenty percent of the people living in advanced

capitalist nations have eighty-six percent of the world gross domestic product, control eighty-two percent of the world export markets, initiate sixty-eight percent of all foreign direct investment, and possess seventy-four percent of the communication wires. Meanwhile, the bottom twenty percent of the people hailing from the poorest nations represent only about one percent of each category respectively. The divide between rich and poor has been gravely exacerbated, with the gap between the two nearly doubling itself from an outrageous factor of 44:1 in 1973 to about 72:1 as of the year 2000. Much of this is directly related to a series of loans begun by the World Bank and the World Trade Organization in the 1990's, which ultimately increased Third World debt by a factor of eight compared with pre-globalization figures.[15]

So, as approximately 1.2 billion people live on less than $1 per day and nearly 3 billion live on less than $2 per day, the roaring heights of global technocapitalism have been unfortunate indeed for nearly half of the human population.[16] Globalization has been especially torturous upon poor women and children, who are denied basic human rights en masse and who, in the attempt to combat their situations of mass starvation and homelessness, enter by the millions each year into the relations of slave-labor and the horrors of the global sex trade. Even more tragically, millions of additional poor (many of whom are women and children) have been violently pressed into the circumstance of outright slavery! Thus, when this is properly related to the neo-colonialist conditions fostered upon the Third World by the explosion of transnational capitalist development, we can rightly assert that these very same cultural, economic and politically hegemonic practices constitute a form of global "family terrorism" meant to oppress those who already suffer the most.[17] As these Third World families almost invariably disclose themselves along racial and ethnic lines when compared with their over-developed Caucasian counterparts, it should be noted that such family terrorism constitutes the oppression of planetary difference generally.

New advances in capitalist lifestyle and practice are then directly responsible for grave exacerbations of widespread poverty and suffering, species genocide, and environmental destruction. It is axiomatic for this essay, then, that the exploitation of species, of the environment, and of the poor by the rich, have a single underlying cause (and those fighting in the name of these, a single enemy) – the globalization of technocapitalsm.[18] Those interested in animal liberation and its correlates must find and develop solidarity with those working towards the conservation and preservation of nature; and each of these groups must also expand their reach – both theoretically and practically – to include the fight for social justice. Clearly, the project before us is immense; we face nothing less than the unprecedented transformation and domination of the planet. Hence, one might wonder about the efficacy of our successfully seeing through an international revolution that is capable of unifying many different social movements together under the banner of immediate socio-ecological crisis.[19]

It will not happen without education but to speak of education – as has the U.N.[20] – as a key process by which we might fend off the worst aspects of today's globalization, and realize more of the utopia in which non-human animals, oppressed human peoples, and the planet are not wholly exterminated but rather ecumenically brought into a new ecological society generally, may be misreading what present educational practices can in fact accomplish. For instance, examining the evolution of the burgeoning movement for environmental education over the last forty years, we can trace both its positive and

negative pedagogical effects – the ways in which it has contributed to progressive causes and fostered forms of ecoliteracy, on the one hand, and the manner in which it became co-opted by establishment powers, functioned technocratically, and has remained altogether marginal in schools of education, on the other. Sensing the limitations of environmental education theorized merely as experiential forms of "outdoor education" (e.g., "No Child Left Inside"), the United Nations began in 2005 the Decade of Education for Sustainable Development with the hope that a new field of sustainable development education (ESD) that engages with social, cultural, and environmental themes will become better theorized, evaluated and ultimately instituted around the world in both academic and non-academic domains.

Tomorrow's sustainable society – one that sustains all life, and not just its most powerful elements – if reliant upon education, will require a pedagogical revolution equal to its present socio-economic counterpart. The field of critical pedagogy has arguably been the leading source of revolutionary pedagogical ideas and practices to date, but as the philosopher of education Ilan Gur-Ze'ev has noted, "Until today, Critical Pedagogy almost completely disregarded not just the cosmopolitc aspects of ecological ethics in terms of threats to present and future life conditions of all humanity. It disregarded the fundamental philosophical and existential challenges of subject-object relations, in which "nature" is not conceived as a standing reserve either for mere human consumption or as a potential source of dangers, threats, and risks."[21] What is required, I argue, is therefore a dialectical blending of critical pedagogy and environmental education that will allow each to overcome their previous theoretical limitations towards the realization of a more inclusive, critical and transformative ecopedagogy – a goal that appears to have represented Freire's own final position on the matter, it should be noted.

In what follows, I will thus attempt to provide the beginnings of a theoretical and historical foundation for a planetary ecopedagogy movement by first providing a summary critique of environmental education trends to demonstrate why ecopedagogy cannot and must not be reduced or simply tethered to existing environmental education curricula and standards, even when they are conceived as education for sustainable development. In closing, I will then go on to call for an expansion of environmental literacy towards ecoliteracy and survey the forms of ecological literacy that I believe are presently relevant for the development of ecopedagogy generally.

Environmental Education's Big Bang and Fizzled Finale

Just as there is now a socio-ecological crisis of serious proportions, there is also a crisis in environmental education over what must be done about it. Over the last half-century, the modern environmental movement has helped to foster widespread social and cultural transformation. In part, it has developed ideas and practices of environmental preservation and conservation, struggled to understand and reduce the amount of pollution and toxic risks associated with industrialized civilization, produced new modes of counterculture and morality, outlined the need for appropriate technologies, and led to powerful legislative environmental reforms as well as a wide range of alternative institutional initiatives. As a form of nonformal, popular education it has stirred many people to become self-aware of the role they play in environmental destruction and to

become more socially active in ways that can help to create a more ecological and sustainable world.

In terms of formal educational programs, federal and state legislatures have mandated that environmental education be included as part of the public education system's curricular concerns with passage of legislation such as the National Environmental Education Act of 1990. Correlatively, over the last 35 years the North American Association for Environmental Education – the world's flagship environmental education organization – has grown from being a fledgling professional society to its current state as the coordinator, in over 55 countries worldwide, of thousands of environmental organizations towards the certification and legitimation of environmental education as a professional research field. These educational programs have apparently made their case, as a comprehensive set of studies were completed in 2005 which found that:

- 95% of all American adults support having environmental education programs in schools;
- 85% of all American adults believe that governmental agencies should support environmental education programs; and that
- 80% believe that corporations should train their employees in how to solve environmental problems.[22]

In many ways, then, the foundation for comprehensive and powerful forms of environmental literacy and ecoliteracy has never been more at hand throughout society.

However, despite the environmental education's significant pedagogical accomplishments, there have also been numerous setbacks and a tremendous amount of work remains to be done. For example, the same studies that revealed Americans' overwhelming support for environmental education programs reported a variety of findings that demonstrate that most Americans continue to have an almost shameful mis-understanding of the most basic environmental ideas. Thus, it was found that an estimated:

- 45 million Americans think the ocean is a fresh source of water;
- 125 million Americans think that aerosol spray cans still contain stratospheric ozone-depleting chlorofluorocarbons (CFCs) despite the fact that they were banned from use in 1978;
- 123 million Americans believe that disposable diapers represent the leading landfill problem when they in fact only represent 1% of all landfill material; and
- 130 million Americans currently believe that hydropower is the country's leading energy source when, as a renewable form of energy, it contributes only 10% of the nations total energy supply.[23]

More troubling still, there has been a burgeoning rise in social and ecological disasters that are resulting from a mixture of unsustainable economic exploitation and environmentally unsound cultural practices. These are ecological issues that require a much deeper and more complex form of ecoliteracy than is presently possessed by the population at large if there still remains significant confusion as to whether or not the ocean is salty. In this context, while it may be unfair to lay the blame for social and ecological calamity squarely on environmental education for its inability to generate effective mass pedagogy, it must still be noted that the field of environmental education

has been altogether unable to provide either solutions or stop-gaps for the ecological disasters that have continued to mount due to the mushrooming of transnational corporate globalization over the last few decades.

In fact, during this same time period, environmental education has tended to become isolated as a relatively marginal academic discipline.[24] It is rarely integrated across the curriculum in either teacher-training, educational leadership or educational research programs of study and is instead generally confined to M.A.-level environmental education certification programs. Further, these degree programs themselves are often lacking rigorous theoretical and politicized coursework, usually focusing instead on promoting the sort of outdoor educational experiences that can advance outdated, overly-essentialized and dichotomous views about nature and wilderness.[25] As Steven Best and Anthony Nocella have theorized, such views as these are of a kind typical of the first two waves of (predominantly white, male, and middle-class) U.S. environmentalism, and have proven insufficient and even harmful towards promoting multiperspectival ecological politics and environmental justice strategies that seek to uncover collective environmental action across differences of race, class, gender, species and other categories of social difference.[26] Hence, so-called "outdoor" environmental education programs stand in need of radical reconstruction. Lastly, a form of relatively de-politicized environmental literacy has become rooted as the field standard since William Stapp (1969), who is considered the "founder" of the environmental education movement, first stressed that the goals of environmental education were: knowledge of the natural environment, interdisciplinary exploration, and an inquiry-based, student-centered curricular framework that could be used for overcoming intractable conflict and ideology in society.[27]

A poster-child example for this form of environmental literacy is the School of Environmental Studies, known as the "Zoo School," in Apple Valley, Minnesota. Here high school-aged juniors and seniors attend school on the zoo grounds, treating the institution and a nearby park as an experiential learning lab where they conduct independent studies and weave environmental themes into their curricular work and projects. A 2003 pamphlet by Michele Archie, though funded and promoted by the United States Environmental Protection Agency, entitled *Advancing Education Through Environmental Literacy*, lauds the school as one which is "using the environment to boost academic performance, increase student motivation, and enhance environmental literacy." But the literacy aspects of this education, which accord with the aims put forth previously by Stapp and now by the North American Association for Environmental Education, lack the deep critical, social and ethical focus that contemporary environmentalism demands.[28]

For instance, the heads of the Zoo School do not have the students pose problems into the history and nature of zoos – a highly problematical social and environmental institution – or become active in the fight against the zoo's own sordid history and policies. As regards the latter project, for example, it would be a worthwhile educational venture to have students become involved in banning dolphins from the zoo (hardly a native species to Minnesota) and to have them returned to either a sanctuary or non-domesticated oceanic habitat. Instead, as of 2006, one can pay $125 to swim with the zoo's dolphins, a practice generally condemned by marine ecologists and environmentalists/animal rightists alike as both inhumane and beyond the bounds of good

environmental stewardship. Alternatively, Zoo School students could be collectively organized to learn to name and oppose the corporate marketing and ideology presently taking place within the zoo. As an example, instead of developing their environmental literacy (as is currently done) through explorative experiences of the zoo's Wells Fargo Family Farm, a place according the zoo that can foster experiences for children "to explain and also to learn about how food gets from farms to tables" (http://www.mnzoo.com/animals/family_farm/index.asp), students could gain literacy into how to organize collectively in opposition to such practices and in how to demand answers from responsible parties as to why high-ranking executives of a leading corporate agribusiness like Cargill presently sit on the zoo's Board of Directors. Additionally, students could learn to read the exhibit against the grain in order to politically problematize why the zoo doesn't create exhibits explaining the ins and outs of truly ecological diets like veganism, but conversely appears to naturalize and support (at least tacitly) as sustainable and conservationist the standard American heavily meat-based diet and the factory farming and slaughterhouse industry which supports it.

However, the Zoo School is promoted within leading environmental education circles as a leader because it is, in the words of the Environmental Education & Training Partnership, "Meeting Standards Naturally."[29] That is, it is motivating students in a new way to go to school and meet or even surpass national curricular and testing standards of a kind consistent with the outcome-orientation of the No Child Left Behind Act. As with other schools that have adopted environmental education as the central focus of their programs, the Zoo School apparently shines – not because it is producing ecological mindsets and sustainable living practices capable of transforming society in radically necessary ways, but because its students' reading and math scores have improved, and they have performed better in science and social studies, developed the ability to transfer their knowledge from familiar to unfamiliar contexts, learned to "do science" and not just learn about it, and showed a decline in the sort of overall behavior classified as a discipline problem.[30] Obviously, regardless of whatever good pedagogy is taking place at the Zoo School, this laudatory praise of its environmental literacy program by environmental educators is little more than the present-day technocratic standardization movement in education masquerading as a noteworthy "green" improvement. Put bluntly: this is environmental literacy as a greenwash.[31]

Worse still, however, is that here environmental literacy has not only been co-opted by corporate state forces and morphed into a progressively-styled, touchy-feely method for achieving higher scores on standardized tests like the ACT and SAT, but in an Orwellian turn typical of the Bush-era it has come to stand in actuality for a real illiteracy about the nature of ecological catastrophe, its causes, and possible solutions. As I have insisted, our current course for social and environmental disaster (though highly complex and not easily boiled down to a few simple causes or solutions) must be traced to the evolution of an anthropocentric worldview grounded in what the sociologist Patricia Hill Collins has referred to as a "matrix of domination," a global technocapitalist infrastructure that relies upon market-based and functionalist versions of literacy to instantiate and augment its socioeconomic, cultural and environmental control. Conversely, the type of environmental literacy standards now showcased at places like the Zoo School as Michele Archie's "Hallmarks of Quality" are those that fail to develop the type of radical and partisan subjectivity in students which might be capable of

deconstructing their socially and environmentally deleterious hyper-individualism or their obviously socialized identities that tend towards state-sanctioned norms of competition, hedonism, consumption, marketization and a form of quasi-fascistic patriotism that they unflinchingly belong to "the greatest nation on earth."

It is clear, then, that despite the effects and growth of environmental education over the last few decades, it is a field that is ripe for a reconstruction of its literacy agenda. Again, while something like the modern environmental movement (conceived broadly) should be commended for the role it has played in helping to articulate many of the dangers and pitfalls that contemporary life now affords, it is also clear that environmental education has thus far inadequately surmised the larger structural challenges now at hand and has thus tended to intervene in a manner far too facile to demand or necessitate a rupture of the status-quo. What has thereby resulted is a sort of crisis of environmental education generally and, as a result, recently the field has been widely critiqued by a number of theorists and educators who have sought to expose its theoretical and practical limitations.

From Environmental Education to Education for Sustainable Development

It was during 1992, at the first Earth Summit in Rio de Janeiro, Brazil, that an attempt to make a systematic statement about the interrelationship between humanity and the Earth was conceived of and demanded – a document that would formulate the environmental concerns of education once and for all in both ethical and ecological (as opposed to merely technocratic and instrumentalist) terms. This document, now known as the Earth Charter (*http://www.earthcharter.org*), failed to emerge from Rio, however. Instead, Chapter 36 of the *1992 Earth Summit Report* went on to address the issue in the following manner:

> Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues. . . . It is critical for achieving environmental and ethical awareness, values and attitudes, skills and behavior consistent with sustainable development and for effective public participation in decision-making.[32]

In 1994, the founding director of the United Nations Environment Programme and organizer of the Rio Earth Summit, Maurice Strong, along with Mikhail Gorbachev, renewed interest in the Earth Charter and received a pledge of support from the Dutch government. This led to a provisional draft of the document being attempted in 1997, with the completion, ratification, and launching of the Earth Charter Initiative at the Peace Palace in The Hague occurring on June 29, 2000. The initiative's goal was to build a "sound ethical foundation for the emerging global society and to help build a sustainable world based on respect for nature, universal human rights, economic justice, and a culture of peace."[33] While hardly a perfect document or initiative, the Earth Charter's announced mission was still nothing short of revolutionary, as it attempted a bold educational reformulation of how humans should perceive their cultural relationship to nature, thereby casting environmental and socio-economic/political problems together in one light and demanding long-term, integrated responses to the growing planetary social and ecological problems.[34]

It was hoped that at the 2002 Earth Summit meetings in Johannesburg, South Africa (i.e., the World Summit for Sustainable Development) the United Nations would adopt and endorse the Earth Charter. However, the summit proved disappointing in many respects, and while Kofi Annan optimistically closed the summit by announcing that $235 million worth of public–private partnerships had been achieved because of the conference and that this put sustainable development strategies firmly on the map, social and environmental activists found the World Summit for Sustainable Development to be a sham for mostly the same reason. Thus, the W$$D (as its critics called it, due to its apparent pro-business agenda and bad taste in staging an Olympics-style, posh event on the outskirts of the Soweto shantytowns' appalling poverty) articulated a central divide between large-scale corporate and governmental technocrats and the more grassroots-based theorists, activists, and educators proper. As a result of the considerable pressure exerted by the U.S. delegates (and the additional political and economic interests of the other large states and non-governmental organizations, the 2002 summit ultimately refused to consider ratification of the holistic, pointedly socialist in spirit, and non-anthropocentric Earth Charter educational framework.[35] Instead, the Decade of Education for Sustainable Development was announced by the U.N. in 2005 and education for sustainable development was promoted as the new crucial educational field to be integrated across the disciplines and at all levels of schooling.

A leading international critic of environmental education has been Edgar González-Gaudiano, who rightly charges that all-too-often the theories, policies, and discursive themes of environmental education have represented voices of the advanced capitalized nations of the global North, as the perspectives of the global South were ignored.[36] For González-Gaudiano this means that the issue of environmental justice, which highlights the cultural racism inherent in mainstream sustainable (and unsustainable) development strategies, is problematically overlooked by most educational programs currently dealing with environmental issues.[37] In opposition, he has developed an intersectional ecological concept of "human security" that could displace commonplace ideas of national security in favor of a problem-posing pedagogy that seeks knowledge of how the environmental factors that contribute to disease, famine, unemployment, crime, social conflict, political repression and other forms of sexual, ethnic or religious violence can be examined as complex social and economic problems deserving of everyone's attention. In this context, towards a consideration of education for sustainable development, González-Gaudiano has remarked that like environmental education before it, education for sustainable development might be a "floating signifier" or "interstitial tactic" capable of providing diverse groups opportunities to produce alliances as part of the construction of a new educational discourse. However, he also finds it troubling that non-environmental educators "either appear to be uninformed or have shown no interest in the inception of a Decade that concerns their work."[38]

For his part, lead editor of the *Canadian Journal of Environmental Education*, Bob Jickling, is additionally worried by the apparently instrumentalist and deterministic nature of education for sustainable development thus far. In his opinion, it is extremely troubling that education for sustainable development's tendency as a field to date is to treat education as merely a method for delivering and propagating experts' ideas about sustainable development, rather than as a participatory and metacognitive engagement with students over what (if anything) sustainable development even means.[39] Indeed, if

this is all that is to be expected of and from education for sustainable development, then it may be concluded that it basically amounts to the latest incarnation of what Ivan Illich cynically referred to as the prison of the "global classroom."[40] Yet it should be pointed out that despite his serious reservations, Jickling notes that there may be many educators already doing good work under this moniker as well.

Like Jickling and González-Gaudiano, I believe that critical ecopedagogues should make strategic use of the opportunities afforded by the Decade of Education for Sustainable Development but must refrain from becoming boosters for it who fail to advance rigorous critiques of its underlying political economy. To my mind, it is clear that this economy is mainly the political and economic global Third Way of so-called liberal centrists like Tony Blair and Bill Clinton, whom the *New York Times* has referred to as the "Impresario of Philanthropy" because of his Clinton Global Initiative and his work on behalf of disaster relief related to the recent Asian tsunami and Hurricane Katrina. The rhetoric of this approach now champions *sustainable development* as a win-win-win for people, business, and the environment, in which the following policy goals are upheld: (1) development "meets the needs of the present without compromising the ability of future generations to meet their own needs" and (2) development improves "the quality of human life while living within the carrying capacity of supporting ecosystems".[41] In its tendency to deploy progressive slogans, Clintonian Third Way politics claims that it wants to put a human face to globalization and that it supports inclusive educational, medical, and civic development throughout the global South in a manner much akin to that demanded by leaders in Latin America and Africa. But if this Third Way political vision really intends to deliver greater equity, security, and quality of life to the previously disenfranchised, it is especially noteworthy that it also mandates that "existing property and market power divisions [be left] firmly off the agenda".[42]

A 2000 speech by Clinton to the University of Warwick exemplifies this claim and so reveals why astute globalization critics such as Perry Anderson have characterized Thirdwayism as merely "the best ideological shell of neo-liberalism today."[43] In his speech, Clinton rhetorically plugs building the necessary "consensus" to allow for the opening of previously closed markets and rule-based trade, such as that sponsored by the International Monetary Fund, in the name of a global humanitarianism, which can overcome disasters such as global warming, disease, hunger, and terrorism:

> I disagree with the anti-globalization protestors who suggest that poor countries should somehow be saved from development by keeping their doors closed to trade. I think that is a recipe for continuing their poverty, not erasing it. More open markets would give the world's poorest nations more chances to grow and prosper.
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> Now, I know that many people don't believe that. And I know that inequality, as I said, in the last few years has increased in many nations. But the answer is not to abandon the path of expanded trade, but, instead, to do whatever is necessary to build a new consensus on trade.[44]

The neoliberal market mechanism remains largely the same, then, in both Third Way welfarism and the aggressive corporatism favored by the current Bush administration. The only difference between them may be the nature of the trade rules and goals issued by the governing consensus. In this, the Clinton Global Initiative is a poster child for the ideology of most U.S. centrist liberals who believe that

administrations can learn to legislate temperance by creating more and more opportunities for intemperate economic investment in alternative, socially responsible markets. The sustainable development vision thereby maintained is of a highly integrated world society, centered and predicated on economic trade, presided over by beneficent leaders who act in the best interests of the people (while they turn an honest profit to boot). However, in this respect we might wonder in a more stringent manner than did the ecologist Garrett Hardin, "*Quis custodies ipsos custodes?*—Who shall watch the watchers themselves?"[45]

Sustainable development has thus increasingly become a buzzword uttered across all political lines; one is as likely to hear it in a British Petroleum commercial as on the Pacifica radio network. As noted, it is now trumpeted also by the United Nations over and against environmental education, thereby challenging every nation to begin transforming its educational policies such that a global framework for ecological and social sustainability can be built in relatively short order. But just what kind of sustainable development is education for sustainable development supposed to stand for though? Is it consonant with alter-globalization views, or is it rather synonymous with neoliberalism in either its Bush or Clinton variants? It charges institutions (especially educational institutions) with altering their norms and behavior in the name of environmental and cultural conservation, but can a top–down movement for organizational change really address the fundamental failures of present institutional *technique*? The ecosocialist and founder of the German Green Party, Rudolf Bahro, noted that most institutional environmental protection "is in reality an indulgence to protect the exterministic structure," which removes concern and responsibility from people so that "the processes of learning are slowed down."[46] Does education for sustainable development amount to something radically different from this? Due to the inherent ideological biases currently associated with the term "sustainable development," education for sustainable development demands careful attention and analysis by critical ecopedagogues over the next decade.

From Environmental Literacy to Ecoliteracies

Jim Cummins and Dennis Sayers effectively delineate three broad categorical types of literacy: the functional, the cultural and the critical.[47] Functional literacy, in their view, constitutes the basics of reading, writing, arithmetic and vocational skills that allow people to negotiate life in an industrialized society. Cultural literacies highlight larger anthropological levels of meaning – that people live in shared communities which have particular traditions of meaning and knowledge expectations, as well as specific forms of agreed upon social interaction depending upon the community. Lastly, critical literacy illuminates the unequal workings of power in societies, allows people to understand the sociocultural workings of domination and oppression and acts as an ethical spur that demands the transformation of society in favor of greater justice and equality.

Cummins and Sayers's framework can be utilized to delineate complimentary forms of environmental literacies as well. As we have seen, functional environmental literacies, as proposed by field founders such as William Stapp or governmental agencies such as the Environmental Protection Agency's Environmental Education Division, involve goals of learning to understand basic scientific ecology, geology and biology to

the degree that they are relevant to social life, on the one hand, and how society can affect basic ecological systems for better or worse, on the other. At another level, it should also be realized that so-called environmental literacies can have a cultural aspect (i.e., different cultures have different ways of relating to and understanding nature). Here mainstream definitions of environmental literacy must be found to be generally lacking, as neither is there any explicit demand for a multicultural ecological outlook and practice, nor is there any clear recognition that literacy requirements for responsible citizenship are themselves particular forms of culturally specific requirements that should not be offered as universal goods for all to learn. Further, to speak of cultural environmental literacies is to enact a crucial move from an environmental to an ecological order of knowledge. For once an understanding has been reached that culture and nature are in dialectical relationship, even as ideas about nature are themselves related across any given culture or interactionally across multiple cultures, to speak simply of "environmental literacy" is inaccurate and insufficient. For the literacy itself no longer relates primarily to an (or the) environment, but rather it aims to delineate potential knowledge about an ecology of relations between particular cultures and the way in which those cultures inhabit their bioregions and habitats. Thus, to realize a primary cultural-aspect of environmental literacy is immediately to recognize the necessary move from an environmental literacy to a cultural ecoliteracy.

But there are various forms of ecoliteracy and while the development of cultural ecoliteracies is absolutely essential if a goal of sustainability is ever to be realized throughout the planet, I seek to argue that we must also realize forms of an higher-order critical ecoliteracy. A critical ecoliteracy involves the ability to articulate the myriad ways in which cultures and societies unfold and develop ideological political systems and social structures that tend either towards ecological sustainability and biodiversity or unsustainability and extinction. In addition, critical ecoliteracy means being able to recognize one's own critical ecoliteracy as a form of ethical epiphany that individuates the state of planetary ecology as a whole at any given time, and which contains within itself a range of transformative energies, life forces, and liberatory potentials capable of affecting the future. Moreover, in the particular example of Western society, a critical ecoliteracy would mean (amongst other things) understanding: the historical roles that waves of colonialism and imperialism have had both socially and environmentally, the ways in which industrial capitalism (including modern science and technology) has worked ecologically and anti-ecologically on the planet both locally and globally, the manner in which an ideological image of "humanity" has served to functionally oppress all that has been deemed Other than human by interested parties, and the historical wrong through which ruling class culture and politics terrorizes planetary life whilst marginalizing, intimidating, confronting, jailing and sometimes even murdering socio-ecological freedom fighters. As literacies involve practical dimensions too, a Western critical literacy would doubtless involve (at a minimum) taking action on these issues at both an individual and collective level, engaging with ecological and sustainable countercultures, rescuing animals and habitats whenever possible, and working for revolutionary counter-hegemonic social change generally in favor of abolishing civic hierarchies based on race, class, gender and other categories of identified social difference.

While frameworks for environmental education and education for sustainable development still represent the two leading programs for potentially addressing ecological concerns within education, then, a variety of smaller cultural and critical ecoliteracy projects have arisen that deserve attention in conjunction with the rise of a movement for ecopedagogy. While critiques can (and should) be advanced that engage with all these versions of ecoliteracy, it should be concluded that, taken altogether in conjunction with developments in critical pedagogy, they represent a mosaic of leading-edge, progressive theories of socio-ecological education and literacy.

A founding figure of the ecoliteracy movement is undoubtedly Frijtof Capra, the Chair of the Center for Ecoliteracy (http://www.ecoliteracy.org). In his recent work, Capra draws upon the systems-oriented nature of biological systems and ecological thinking in calling for an education for sustainability that favors the ability to synthesize instead of analyze experience and which seeks to describe life as complex systems of relationships that work in an ever-evolving, holistic and qualitative perspective.[48] Some transformative educators like Brian Swimme of the California Institute of Integral Studies are experimenting with Capra's notion of ecoliteracy by combining it with other pedagogical models, such as Alfred North Whitehead's rhythm of ideas and process-orientation, Loren Eiseley's literary naturalism and Pierre Teilhard de Chardin's notion of an evolving spirit of mind and grace. On the other hand, in the United Kingdom, Capra's work is also being importantly applied alongside the critique of capitalism by Stephen Sterling.[49] Still, a potential to de-politicize humanity's current ecological crisis through a failure to articulate a braod-based, inclusive vision of critical ecoliteracy are problems that Capra's movement must continue to seek to address.

In this respect, a promising bridge has begun to be made by Edmund O' Sullivan between Capra's systems-oriented pedagogy and the transformative, social justice orientation of critical pedagogy.[50] O' Sullivan, and those associated with him at the University of Toronto's Transformative Learning Centre (http://www.oise.utoronto.ca/tlcentre), have begun to imaginatively combine visions of transformative education with a biocentric approach that is also critical of contemporary geo-political practices and which attempts to foster a literacy for positive pedagogical experiences of the art, beauty and spirit of the planet as we might know it. O' Sullivan himself promotes the Earth Charter as a meaningful example of how radical social positions can be articulated within global institutional frameworks. Further, drawing upon the eco-theologian Thomas Berry's notion of the important role of cosmology in education, O' Sullivan has called for "a new story" that will value the arrival of the "Ecozoic age" in which visions of the Earth and of planetary equity can take the place in our cultural stories of now pervasive notions of oppressive domination and repressive violence.

Another founding figure of the ecoliteracy movement is David Orr. In his work, Orr wonders why environmental education has proven inadequate to quell ecological crisis.[51] In part, his answer is that built into the emerging environmental discourse of the last three decades has been a sort of equivocation of terms – as is the case, he argues, with the talk surrounding sustainability. On the one hand, says Orr, many (chiefly politicians and CEOs) have called for a "sustainable society" that is really a code for a form of "technological sustainability." Technological sustainability views the human predicament as a rationally-solvable, anthropocentric, scientifically-directed state of

affairs, one that will solve its problems through the proper top-down management of an endless-growth economy. On the other hand, many others (chiefly environmentalists) have talked about a "sustainable society" in terms of "ecological sustainability" – a view that questions human rationality and motives, emphasizes the importance of natural systems and their equilibrium for life, and which sides with a critical view of the dominant social practices that appear to breed disequilibrium.

Orr's notion of ecological literacy ultimately attempts to arbitrate the problems inherent in these disputes over environmental education (and now education for sustainable development) by resolving them within a postmodern "both/and" logical approach which integrates and incorporates insights from all of the various models previously enumerated. While critical of the potential complicity of environmental education curricula and policies with truly unsustainable lifestyle practices, Orr nonetheless feels that they too have something to contribute in the attempt to avert a further manifestation of an ecological crisis situation. While likewise drawing upon Capra's notion of holistic systems, from critical pedagogy's conceptions of literacies into power and of critical dialogue, and from ideas about an Earth-centered cosmology akin to O' Sullivan, Orr's ecoliteracy also calls for a functional balancing of personal experiences of the natural world with scientific perspectives on ecological systems. However, in surpassing a functional environmental literacy approach, Orr describes functional literacy as being but the beginning of a fuller emerging literacy into the full range of human ontic and existential life. As students move beyond the mere observation and understanding of natural and social systems, always with an eye towards ecological harmony and balance, Orr contends that students inherently come to recognize an additional ethical responsibility (as did figures like Henry David Thoreau, John Muir, and Aldo Leopold) to model such balance within their own life practices and relationships with people, other species and the planet. Thus, while Orr recognizes a responsibility to act on behalf of the world (potentially radically when it is being fiercely degraded), he also realizes that part of becoming ecologically literate is the adoption of a perspective for behavior that values complexity, process, and the sort of temperance that is bred only by being actively involved in a lifelong practice of critical understanding and spiritual wonder. Ultimately, Orr's ecoliteracy therefore asks of us that we each remain open to listening to a manifold of different knowledge systems, that we act collaboratively with a diversity of others (in a non-anthropocentric fashion), that we remain rigorous and critical in our ethical stance towards life, and that we constantly integrate our own life experiences towards the general end of helping our home planet Earth to sustain the rich and beautiful tapestry of life which it both supports and provides.

Another key new ecoliteracy movement is that which is developing under the moniker of humane education. Humane education has a long pedigree associated primarily with the movement for non-human animal welfare and as such humane curricula presently focus on ecoliteracy campaigns to help homeless pets, combat animal cruelty in society, promote humane-certified foodstuffs in school cafeterias, raise awareness about the fur trade, and generate greater familiarity with wild animals amongst school-aged children. The move to envision and create a more radicalized, holistic and inclusive form of ecoliteracy for humane education is probably best charted by movement theorist David Selby.[52] Selby's work documents with great nuance the exciting myriad of historical vectors that are presently coalescing around the movement for humane

education and attempts to argue that humane education can embody the integration of seven literacy areas: development education, environmental education, human rights education, peace education, gender equity education, and race equity education. Yet, Selby has also noted with disappointment that humane education, especially of a variety that he is calling for, is essentially below the horizon line of academic disciplines. Indeed, this lack of university support has made funding for humane education programs difficult and the lack of these programs has prevented humane education's further integration into schools and other local educational institutions.

Lastly, no survey of contemporary ecoliteracy frameworks would be complete without mention of the movement for ecojustice education chiefly theorized by C. A. Bowers.[53] Bowers and his associates, which include educators and theorists such as Rebecca Martusewicz,[54] have also developed a Center for EcoJustice Education (http://www.centerforecojusticeeducation.org) that seeks to promote ecojustice aims at the grassroots level, within the academy and for policy initiatives. Besides serving as a central hub for ecojustice educators, it publishes an online journal and houses a dictionary wherein key socio-ecological concepts are defined from an ecojustice perspective.

Though Bowers has spent voluminous pages in excoriating the theorists of critical pedagogy[55] for promoting a version of literacy that focuses on developing "critical" capacities – which Bowers believes are ideologically linked to a post-Enlightenment culture of autonomous selves that co-construct the modern domination of nature proper – Bowers's own version of ecoliteracy radically integrates cultural and critical capacities as it draws upon influences such as the Frankfurt School of critical theory, Jacques Ellul, Gregory Bateson and Ivan Illich in an attempt to reveal how a culture predicated on liberal Western individualism has produced ecological crisis through the pervasive homogenization, monetization and privatization of existence. In Bowers's view, the extension of Western liberal ideology through cultural means results in the alienation of community, the loss of forms of inter-generational wisdom that teach sustainability and commonality, and the imperialist/colonialist translation of cultural diversity into a global cosmopolitanism. Against this, Bowers calls for literacy into the way in which indigenous (and other) cultures that have long-standing traditions of sustainability in their cultural practices understand and relate to the world. In this, ecojustice literacy works alongside the ecological literacy aims of indigenous educators themselves.[56] Additionally, in an age now characterized by the rampant globalization of cultures, Bowers feels ecojustice literacy must further knowledge of how sustainable cultures are presently resisting their assimilation by re-defining themselves around vernacular social practices that strengthen community and commons-based approaches to living well. Finally, Bowers's ecojustice version of ecoliteracy calls for students to question deeply into the latest fetish for technological infusions of computers and other digital paraphernalia into culture and education and he seeks to mount a larger collective cynicism about the current role naïve constructivist-oriented pedagogies are playing in and around schools.

Though the potential significance of (at least some of) the ecojustice critique made of critical pedagogy distinguishes ecojustice theory from other ecoliteracy approaches, it is in many respects also its greatest downfall. Far too much energy has been spent in promoting and demolishing critical pedagogy as a straw man for all that is presently wrong with mainstream education vis-à-vis its relationship to ecoliteracy. While critical pedagogy is undoubtedly a leading movement amongst progressive

educators, to imagine that the field of education proper is somehow working in concert with the demands of educational left is a kind of propaganda that is better left to rightist organizations like the Heritage Foundation. However, especially because the progressives are marginalized in professional education circles and because critical pedagogy currently does have the ear of many leftist educators, it would be more productive in my opinion for ecojustice educators to find ways to bridge differences between the two camps, undertake the furtherance of critical but respectful dialogue between the two movements, and so work towards forging a more united front in education for the social and ecological betterment of all.

Concluding Remarks

Space prevents me from engaging with the real history of ecopedagogy as a movement born primarily in a Latin American context during the 1990s within Freirean circles, including important personages like Moacir Gadotti, Francisco Gutierrez and Cruz Prado, as well as Leonardo Boff. Much of their work remains untranslated into English and while it is stimulating revolutionary developments in education internationally, such work has yet to become rooted in a Northern or Western educational contexts on the whole. But just as in relation to his own work, when Paulo Freire said "the progressive educator must always be moving out on his or her own, continually reinventing me and reinventing what it means to be democratic in his or her own specific cultural and historical context,"[57] so too now is there the challenge to develop forms of ecopedagogy relevant to the advanced capitalist nations, their cultures, and their histories. One way in which I am attempting to do this is to forge a creative affiliation of scholars, teachers, leaders of non-governmental organizations, activists and other citizens called Ecopedagogy Association International (http://ecopedagogy.org) to provide forums for productive dialogues on what ecopedagogy is, what it is not, and what it needs to be.

As I have argued, one thing we can say is that ecopedagogy cannot be reduced to environmental education. While environmental education appears to be growing professionally as a field in many ways and should continue to become ever-more central to educational and political discourse over the next decade(s) under the banner of sustainability, or more aptly education for sustainable development, the immediate institutional trend for even broad-based forms of environmental education is a depressing move away from the types of radical ecoliteracies I believe are now demanded by the imminent threats posed to life by the mounting social and ecological crises. This is an ominous indicator on the educational field's horizon line (and on society's as well) -- one that speaks to a deep fracture that exists between the majority of the people in and around institutions of education that favor a rational planning and "wise use" economic approach and the revolutionary minority that are bent on realizing an ethical "revaluation of all values" that will ultimately be capable of meeting the present challenge set before us by the growing global catastrophes.

Now, simply, we must strive to challenge our old assumptions as educators – even as critical educators – and to build our solidarities and organize a common language and ways of being together more than ever before. This plan for action as I can name it is for a radical ecopedagogy – a term delineating both educational and ethical literacies. Undoubtedly, in the age of standardized everything, educational institutions stand in need

of reconstruction and re-dreaming to be set a-right. Yet, education remains a primary institution towards affecting social and ecological change for the better, and so it deserves to be fought for, transformed by the needs of the day, and so wizened by lessons of the past. Though however limited in power, the ecopedagogues are placing their feet inside the doors of school buildings everywhere even now and calling for the demonstration of the emancipatory feelings inside each and every one of us: let's storm the entrance and let love live! It is one thing to do in these desperate times. I believe it is worth the chance – it could mean the difference between today's rage and tomorrow's hope. What will you do?

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[1] Paulo Freire, *Pedagogy of Indignation* (Boulder, CO: Paradigm Publishers, 2004).
[2] On "globalization," as the growth of Western technocapitalism since World War II, and its contemporary meanings, see Steven Best and Douglas Kellner, *The Postmodern Adventure: Science, Technology and Cultural Studies at the Third Millenium* (New York, Guilford Press, 2001), pp. 205-53. On resistance movements to globalization, see Richard Kahn and Douglas Kellner, "Resisting Globalization" in George Ritzer (ed.), *The Blackwell Companion to Globalization* (Malden, MA: Blackwell Publishers, 2007).
[3] On the ecological consequences of states of biophilia and necrophilia, see Erich Fromm, *The Heart of Man* (New York: Harper & Row, 1964). I have expanded on this idea elsewhere in Richard Kahn, "The Educative Potential of Ecological Militancy in an Age of Big Oil: Towards a Marcusean Ecopedagogy" in Douglas Kellner, Tyson Lewis, and Clayton Pierce (eds.), *Marcuse's Challenge to Education* (Lanham, MD: Rowman & Littlefield, *forthcoming*).
[4] Gregory Bateson, *Steps to an Ecology of Mind* (Chicago: University of Chicago Press, 1972), pg. 492.
[5] Joel Kovel, *The Enemy of Nature* (New York, Zed Books, 2002), pp. 38-39. For the Union of Concerned Scientists, see "World Scientists' Warning to Humanity" in Paul R. Ehrlich and Anne H. Ehrlich, *Betrayal of Science and Reason: How Anti-Environmental Rhetoric Threatens Our Future* (Washington, D.C., Island Press, 1996), pp. 242-50. For Raven, see "What We Have Lost, What We Are Losing," in Michael J. Novacek (ed.), *The Biodiversity Crisis: Losing What Counts* (New York, New Press, 2001), pp. 58-62.
[6] Al Gore, *An Inconvenient Truth* (New York, NY: Rodale Books, 2006). It should be noted that despite the media spectacle tethering vehicular gas mileage to global warming as a primary cause of global climate change, the global livestock industry contributes far and away more global warming emissions than all forms of transportation combined and should be considered a grave ecological harm. For instance, see the U.N.'s Food and Agriculture Organization's 2006 report *Livestock's Long Shadow*. Gore has himself been the subject of recent critique by animal rights organizations like PETA and some environmental groups such as Sea Shepherd Conservation Society for leaving livestock and dietary practices out of his agenda to combat global climate change.
[7] Rick Weiss, "Key Ocean Fish Species Ravaged, Study Finds," *Washington Post* (May 15, 2003).
[8] Boris Worm, et al., "Impacts of Biodiversity Loss on Ocean Ecosystem Services," *Science,* Vol. 314, No. 5800, (2006), pp. 787-790.
[9] Joseph B. Verrengia, "Scientists Raise Alarm Over Sea-Mammal Deaths," *The Associated Press* (June 16, 2003).

[10] The statistics in this paragraph, unless otherwise noted, are listed in Joel Kovel, *The Enemy of Nature*, pp. 3-5.
[11] Matthew Scully, *Dominion: The Power of Man, the Suffering of Animals, and the Call to Mercy* (New York, St. Martin's Press, 2002), pp. 284-85.
[12] Douglas Kellner, "Theorizing Globalization," *Sociological Theory*, Vol., 20, No. 3, (2002), pp. 285-305.
[13] Richard Leakey and Roger Lewin. *The Sixth Extinction* (New York: Doubleday, 1995).
[14] Joel Kovel, *The Enemy of Nature*, p. 4.
[15] Joel Kovel, *The Enemy of Nature*, p. 4.
[16] World Bank, *World Development Report 1998* at http://www.worldbank.org.
[17] For a thorough discussion relating globalization to the oppression of poor women and children, see Rhonda Hammer, *Antifeminism and Family Terrorism: A Critical Feminist Perspective* (Lanham, MD: Rowman & Littlefield, 2002), pp. 187-194.
[18] This oft-quoted memo from when Lawrence Summers, President of Harvard and former Treasury Secretary for Bill Clinton, worked for the World Bank serves as the penultimate articulation of how oppression of the environment and poor are linked together by technocapitalist elites:

> Just between you and me, shouldn't the World Bank be encouraging more migration of the dirty industries to the LDCs [less developed countries]?...I think the economic logic behind dumping a load of toxic waste in the lowest wage country is impeccable and we should face up to that...
>
> I've always thought that under-populated countries in Africa are vastly under-polluted; their air quality is probably vastly inefficiently low [sic] compared to Los Angeles or Mexico City. – in John Bellamy Foster, *Ecology Against Capitalism* (New York, Monthly Review Press, 2002), p. 60.

[19] In this light, see Tom Athanasiou, *Divided Planet: The Ecology of Rich and Poor* (Athens, University of Georgia Press, 1998).
[20] "Even the most casual reading of the earth's vital signs immediately reveals a planet under stress. In almost all the natural domains, the earth is under stress – it is a planet that is in need of intensive care. Can the United States and the American people, pioneer sustainable patterns of consumption and lifestyle, (and) can you educate for that? This is a challenge that we would like to put out to you." – Noel J. Brown, United Nations Environment Programme, *National Forum on Education about the Environment* (October 1994).
[21] Ilan Gur-Ze'ev, (ed.), *Critical Theory and Critical Pedagogy Today: Toward a New Critical Language in Education* (Haifa: Haifa University, 2005), p. 23.
[22] Kevin Coyle, *Environmental Literacy in America. What 10 Years of NEETF/Roper Research and Related Studies Say About Environmental Literacy in the U.S.* (Washington, D.C.: The National Environmental Education & Training Foundation, 2005).
[23] Kevin Coyle, *Environmental Literacy in America*.
[24] Indeed, in 2001, it was revealed at the International Standing Conference for the History of Education at the University of Birmingham, UK, that aside from one purely

Australian effort, as of yet there has been no rigorous attempt to reconstruct the history of environmental education proper – it is literally a discourse without a chronicle.

[25] Though it must be noted that even fields like outdoor education are contested terrains in which norms and boundaries can be pushed to advance progressive agendas. For instance, see Connie Russell, et. al., "Queering Outdoor Education," in *Pathways: The Ontario Journal of Outdoor Education*, Vol. 15, No. 1, (2003), pp. 16-19.

[26] Steven Best and Anthony Nocella, II, "A Fire in the Belly of the Beast: The Emergence of Revolutionary Environmentalism," in Best and Nocella, II (eds.), *Igniting a Revolution: Voices in Defense of the Earth* (Oakland, AK Press, 2006).

[27] William Stapp, "The Concept of Environmental Education," in *Journal of Environmental Education*, Vol. 1, No. 3, (1969), pp. 31-36.

[28] In its 2000 report, *Excellence in Environmental Education: Guidelines for Learning (K-12)*, the North American Association of Environmental Education lists four essential aspects to environmental literacy: 1) Developing inquiry, investigative, and analysis skills, 2) Acquiring knowledge of environmental processes and human systems, 3) Developing skills for understanding and addressing environmental issues, and 4) Practicing personal and civic responsibility for environmental decisions. While the third and fourth aspects respectively gesture to the possibility of a politicized version of environmental education, the lack of a specific demand for critical social thought on the part of students or for the understanding of the role of power in society, coupled with the field's traditionally "bi-partisan" approach to conflict resolution, means that the potential in this literacy agenda to foment positive ecological change through educative means is significantly undermined.

[29] Michele Archie, *Advancing Education Through Environmental Literacy*, Alexandria, VA: Association for Supervision and Curriculum Development.

[30] Joanne Lozar Glenn, *Environment-based Education: Creating High Performance Schools and Students* (Washington, D.C.: National Environmental Education and Training Foundation, 2000).

[31] Wikipedia (http://en.wikipedia.org/wiki/Greenwash) defines "greenwash" thusly: Greenwash (a portmanteau of green and whitewash) is a pejorative term that environmentalists and other critics use to describe the activity of giving a positive public image to putatively environmentally unsound practices.

[32] United Nations Conference on Environment and Development, "Promoting Education, Public Awareness and Training," in *Agenda 21* (Geneva: UN, 1992), pp. 221-227.

[33] See http://www.earthcharter.org/innerpg.cfm?id_page=95.

[34] See David Gruenewald, "A Foucauldian Analysis of Environmental Education: Toward the Socioecological Challenge of the Earth Charter," in *Curriculum Inquiry*, Vol. 34, No. 1, (2004), pp. 71–107.

[35] Moacir Gadotti, "Paulo Freire and the Culture of Justice and Peace: The Perspective of Washington vs. The Perspective of Angicos," in Carlos Torres and Pedro Noguera (eds.), *Paulo Freire and the Possible Dream* (Denmark: Sense Publishers, *forthcoming*).

[36] See Edgar González-Gaudiano, "Education for Sustainable Development: Configuration and Meaning," in *Policy Futures in Education*, Vol. 3, No. 3 (2005), pp. 243-50.

[37] Peter McLaren and Edgar González-Gaudiano. "Education and Globalization, An Environmental Perspective – An Interview with Edgar González-Gaudiano," in *International Journal of Educational Reform*, Vol. 4, No. 1 (1995), pp. 72-78.
[38] Edgar González-Gaudiano, "Education for Sustainable Development: Configuration and Meaning," p. 244.
[39] Bob Jickling, "Sustainable Development in a Globalizing World: A Few Cautions," in *Policy Futures in Education*, Vol. 3, No. 3 (2005), pp. 251–259.
[40] Ivan Illich and Etienne Verne, *Imprisoned in the Global Classroom* (London: Writers & Readers, 1981).
[41] See respectively Gro Harlem Brundtland, *Our common future: Report of the World Commission on Environment and Development* (Oxford: Oxford University Press,, 1987) and David Munro and Martin W. Holdgate, (eds.), *Caring for the earth. A strategy for sustainable living* (Gland, Switzerland: The World Conservation Union, United Nations Environment Programme, and World Wildlife Fund, 1991).
[42] Doug Porter and David Craig, "The third way and the third world: Poverty reduction and social inclusion in the rise of 'inclusive' liberalism," in *Review of International Political Economy*, Vol. 11, No. 2 (2004), pp. 387–423.
[43] Perry Anderson, "Renewals," in *New Left Review*, Vol. 11, No. 1 (2000), pg. 11.
[44] William J. Clinton, "Remarks by the president to the community of the University of Warwick." (December 14, 2000).
[45] Garrett Hardin, "The tragedy of the commons," *Science*, Vol. 162 (1968), pp. 1243–1248.
[46] Rudolf Bahro, *Avoiding social and ecological disaster: The politics of world transformation* (Bath, U.K.: Gateway Books, 1994).
[47] Jim Cummins and Dennis Sayers, *Brave New School: Challenging Cultural Illiteracy through Global Learning Networks* (New York: St. Martin's Press, 1999).
[48] See Frijtof Capra, *The Hidden Connections: Integrating the Biological, Cognitive, and Social Dimensions of Life into a Science of Sustainability* (New York, NY: Doubleday, 2002) and his "Ecoliteracy: A Systems Approach to Education," in Zenobia Barlow (ed.), *Ecoliteracy: Mapping the Terrain* (Berkeley, CA: Learning in the Real World, 2000), pp. 27-35.
[49] Stephen Sterling, *Sustainable Education: Re-visioning Learning and Change* (Bristol, Vermont: Green Books, 2001).
[50] Edmund O'Sullivan, *Transformative Learning: Educational Vision for the 21st Century* (London: Zed Books, 1999). See also, Edmund O'Sullivan and Marilyn Taylor, *Learning Toward an Ecological Consciousness: Selected Transformative Practices* (New York, NY: Palgrave, 2004).
[51] See David Orr, The Nature of Design: Ecology, Culture and Human Intention (Oxford: Oxford University Press, 2002), Earth in Mind: On Education, Environment, and the Human Prospect (Washington, DC: Island Press, 1994) and Ecological Literacy: Education and the Transition to a Postmodern World (Albany, NY: SUNY Press, 1992).
[52] David Selby, "Humane Education: Widening the Circle of Compassion and Justice," in Tara Goldstein and David Selby, (eds.), *Weaving Connections: Educating for Peace, Social and Environmental Justice* (Toronto, CA: Sumach Press, 2000) and his *Earthkind: A teacher's handbook on humane education* (Stoke-on-Trent: Trentham, 1995). Another

more inclusive vision of human education is Zoe Weil, *The Power and the Prooomise of Humane Education* (British Columbia, Canada: New Society Publishers, 2004).

[53] For instance, C.A. Bowers, *Transforming Environmental Education: Making the Renewal of the Cultural and Environmental Commons the Focus of Educational Reform* (EcoJustice Press, 2006). Online at: https://scholarsbank.uoregon.edu/dspace/bitstream/1794/3070/6/transEE-rev.pdf; also his *Educating for Eco-Justice and Community* (Athens: University of Georgia Press, 2001) and *Education, Cultural Myths, and the Ecological Crisis: Toward Deep Changes* (New York: SUNY Press, 1993).

[54] See Rebecca Martusewicz, *Seeking Passage* (New York, NY: Teachers College Press, 2001) and Rebecca Martusewicz and Jeff Edmundson, "Social Foundations as Pedagogies of Responsbility and Eco-Ethical Commitment," in Dan Butin, (ed.), *Teaching Social Foundations of Education: Contexts, Theories, and Issues* (Mahwah, N.J.: Lawrence Erlbaum, 2005).

[55] Besides those already mentioned, see for example C. A. Bowers, "Can Critical Pedagogy Be Greened?" in *Educational Studies*, Vol. 34 (2003), pp. 11-21.

[56] For example, see the work of Gregory Cajete, (ed.), *A People's Ecology: Explorations in Sustainable Living: Health, Environment, Agriculture, Native Traditions* (Santa Fe, NM: Clear Light Publishers, 1999).

[57] Paulo Freire, et. al., *Mentoring the Mentor* (New York, NY: Peter Lang, 1997), pg. 308.