# From Education for Sustainable Development to Ecopedagogy: Sustaining Capitalism or Sustaining Life?

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Richard Kahn

> Developers, Developers, Developers, Developers, Developers, Developers, Developers, Developers, Developers, Developers, Developers, Developers, Developers, Developers . . . Yes!
> – Steve Ballmer, CEO of Microsoft Corporation (ZDNet 2001)[1]

Etymologically, a disaster is a kind of misfortune, and so it is one of the great ironies and sorrows of the present age that disasters have become prime fodder for the sort of laissez-faire economic development that aims mainly at the creation of private fortunes for well-connected corporations and individuals (Klein, 2007). Of course if such fortunes were only epiphenomena of more peaceful, just, and balanced societies – in short, ecological societies – then perhaps critical tempers could be mollified to some degree. However, as numerous studies have revealed, ongoing economic reconstruction programs that seek to integrate regional economies into the global neoliberal framework appear not only to have generally failed to improve most people's lives, but have disastrously grown the gaps between the rich and poor (Scott, 2001; Reuter, 2007; Pew Research Center for People and the Press, 2003). Hence, alter-globalization movements have arisen that seek to challenge the hegemony of this agenda (Kahn and Kellner, 2007), and indeed, philosophies that have stressed cultural empowerment for "less developed" nations, instead of their capital improvement, can now be traced back nearly fifty years. In educational circles, for instance, theories opposing the instrumental extension of global capital into the Third World date to at least the early texts of radical theorists such as Paulo Freire and Ivan Illich, who promoted "cultural action for freedom" (Freire, 2000) and a founding form of post-development theory (Rahnema and Bawtree, 1997), respectively.

There is also 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" (Dugger, 2006) 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 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" (Brundtland, 1987) and 2) development improves "the quality of human life while living within

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the carrying capacity of supporting ecosystems" (Munro and Holdgate, 1991). In its tendency to deploy quasi-leftist 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" (Porter and Craig, 2004, p. 390).

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" (Anderson, 2000, p. 11). 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.
>
> 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 (Clinton, 2000).

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. center-left 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, as Garrett Hardin put it, "Who shall watch the watchers themselves?" (Hardin, 1968, p. 1245).

Sustainable development has increasingly become a buzzword uttered across all political lines; one is as likely to hear it in a British Petroleum commercial as on Pacifica radio. In 2005, the United Nations ushered in the Decade of Education for Sustainable Development, and has thereby challenged 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. 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 capitalist variants? It charges institutions (especially educational institutions) with altering their norms and behavior in the name of environmental

protection, 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" (Bahro, 1994, p. 164). Does education for sustainable development amount to something radically different from this? What is the difference between education for sustainable development and ecopedagogy?

**An Ecological Defense of the Apocalyptic**

> It may seem impossible to imagine that a technologically advanced society could choose, in essence, to destroy itself, but that is what we are now in the process of doing.
> – Elizabeth Kolbert (2006)

The political left has long been suspicious of *catastrophist* ideas and language. This is understandable – the politics of apocalypticism generally run counter to enlightened reason, critical deliberation, and a rigorous sense of tolerance. Further, as fears of impending disasters can flirt, formally or informally, with millenarian aspirations, the largely secular left has been ideologically predisposed to disregard such fears as reactionary fantasies. The unchecked neoconservative-led reaction to 9/11 has certainly provided ample evidence that this manner of disaster politics, when devoid of popular disbelief and critique, can manifest disastrous consequences such as unending war, Machiavellian imperialism, and the brutalization of democracy via Big Lies and countless megaspectacles that seek to convince people that they must win at all costs against the forces of "evil." One can find similar logic spouted across the AM radio dial, produced by all manner of xenophobic, racist, classist, and misogynistic individuals and groups. Finally, far-right organizations such as the LaRouche movement, hate groups like skinheads, and armed militias who fear the erection of a New World Order, all frequently invoke widespread social disaster as either presently underway or frightfully imminent. In all these cases, it is claimed that disaster can be avoided through dehumanization processes in which true believers consent to violence in the name of peace and the limitation of others' freedoms in the name of liberty.

In recent years, the democratic establishment has also shown itself willing to capitalize on the public's fears of catastrophe. In particular, elements of ongoing and potential ecological crises, which are at least scientifically real, have been exploited to garner support for the Democratic Party, its candidates, or various voting propositions developed by its constituency. For example, during the 2004 presidential race, the MoveOn PAC (political action committee) helped sponsor mass viewings of the rather absurd film *The Day after Tomorrow*, in which global climate change is spectacularly portrayed as generating natural disasters and glacial advance over the eastern seaboard during the span of only a few days. MoveOn's idea was not to educate people about the dangerous levels of greenhouse gases in our atmosphere, but rather to score political points against Republicans by creating environmental concerns among potential voters through a theatrical depiction of natural disaster coupled with carefully placed advertisements targeting George W. Bush's woeful environmental policy record. More recently, Al Gore produced perhaps the first spectacular lecture with his broadly viewed global climate change documentary *An Inconvenient Truth*. While his movie offers much more science than showmanship, a crucial aspect of the film is the way in which Gore's own questionable track

record on the issue has been therein recast as instead exemplifying the sort of maverick and visionary leadership that (it is argued in the film) deserved the presidency in 2000, delivered him a Nobel Peace Prize in 2007, and had many clamoring for his presidential nomination in 2008 prior to Obamania.

In yet another example, liberal film and music celebrities like Brad Pitt, Leonardo DiCaprio, Matt Damon, George Clooney, Angelina Jolie, and Jay Z have been drafted (many through the Clinton Global Initiative) to promote sustainable development by attaching their star power to environmental causes. Pitt sponsored architectural contests in which developers vied for opportunities to rebuild New Orleans as a "green" city that includes state-of-the-art technology, high-density housing, live–work communities, and energy-saving designs. In a July 15, 2006 article in the *Washington Post*, Linda Hales quotes Pitt as saying, "We want to rebuild intelligently." Yet missing in all this hoopla was the fact that New Orleans is by definition not *sustainable* as a city. This goes well beyond its wetlands loss and low elevation, for it is only a matter of time until nature successfully overcomes the upstream machinations[2] of the Army Corps of Engineers to control the flow of the Mississippi River and thereby keep it directed toward New Orleans. Eventually, perhaps soon, the Mississippi River *will* break its banks and pour headlong into the adjacent Atchafalaya River. Once this occurs, New Orleans will almost instantly turn from a vital economic port town to a peninsular city cut off from the river's flow, which will in turn come to empty into the Gulf of Mexico a couple of hundred miles to New Orleans's west (McPhee, 1989). Does anyone now bent on intelligent and sustainable reconstruction of the city, much less those that live or hope to live there, even recognize this ecological fact?

Despite reasons to be critical of, if not downright cynical toward, the political exploitation of natural disasters, the reality is that our present historical moment is constituted by planetary ecological crisis to such a degree that environmentalism can no longer be swept aside as a single-issue political concern of bourgeois whites. As the historian E. P. Thompson (1980) has written, it appears that exterminism may indeed prove to be the last stage of civilization, a thought echoed by an alarming number of recent texts charting the burgeoning relationships between social and ecological disasters (Kunstler, 2005; Brown, 2006; Rees, 2003; Diamond, 2005; Flannery, 2006; Posner, 2004).

The environmental movement that has arisen over the last few decades certainly has not been without significant accomplishments, but its inability to offer holistic social critiques and real cultural alternatives has resulted in the continued exponential rise of ecological crises regardless.[3] For example, since the first Earth Day of 1970 we have witnessed a form of *endless growth political economy* that is literally overproducing and consuming the planet toward death. Wholly without precedent, the human population has nearly doubled during this time period, increasing by some 2.5 billion people (Kovel 2002, p. 3). Similarly, markets have continued to worship the gods of speed and quantity and refused to conserve**.** The use and extraction of nonrenewable energy resources, such as oil, coal, and natural gas, has followed and exceeded the trends set by the population curve despite many years of warnings about the consequences inherent in their overuse and extraction, and this has led to a corresponding increase in the carbon emissions known to be responsible for global warming (IPCC, 2007).[4]

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 thirty years, resulting in about half of the planet's forests disappearing (Kovel, 2002, p. 4), while throughout the oceans, global fishing has also doubled resulting in a

recent report finding that approximately 90 percent of the major fish species in the world's oceans have disappeared (Weiss, 2003). 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, a there is expected to be no extant commercial fishery left active in the world by 2048 (Worm, *et al.*, 2006). Further, such nets are drowning and killing about one thousand whales, dolphins, and porpoises daily, some of the very species already near extinction from centuries of commercial hunting (Verrengia, 2003). Since the end of the 1960s, 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 (Kovel, 2002). 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 across the world, vast unimaginable slaughterhouses (brutal and ecologically ruinous production lines in which thousands of animals are murdered for meat harvesting every hour) have also become the business standard (Singer and Mason, 2006).

Almost all of these trends are escalating and most are accelerating. Even during what recently amounted to a current economic downturn, transnational markets and development continued to flow and evolve, and the globalization of *technocapital* (Best and Kellner, 2001) continues to fuel yet another vast reconstruction of the myriad planetary political, economic, and sociocultural forces into a futuristic information society. Over the last few decades then, humanity has unfolded like a shock wave across the face of the Earth, one that has led to an exponential increase of transnational marketplaces and startling achievements in science and technology, but one that has also had devastating effects on 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 nonhuman species, including vast numbers of mammals, birds, reptiles, and amphibians. Comparing the numbers involved in this catastrophe with the handful of other great extinctions within the prehistoric record has led the esteemed paleoanthropologist Richard Leakey to dub this age as the time of "the Sixth Extinction," a great vanishing of creatures over the last thirty-odd years such as the planet did not see during its previous sixty-five million (Leaky and Lewin, 1995).

The critical theorist Herbert Marcuse referred to the sort of systemic disregard for life evinced by statistics such as these as "ecocide" (Kellner 2005, p. 173) – the attempt to annihilate natural places by turning them into capitalist cultural spaces, a process that works hand in hand with the genocide and dehumanization of people as an expression of the market economy's perpetual expansion. More recently, others speak of ecocide as the destruction of the higher-order relations that govern ecosystems generally (Broswimmer, 2002), as when economies of need take areas characterized by complexity and diversity (like the Amazonian rainforest) and reduce them to the deforested and unstable monoculture of soybeans for cattle feed. However, while it is no doubt possible to disable an ecosystem from sustaining much life, it is not clear that one can actually kill it. Instead, we are witnessing a process by which bioregions are being transformed pathologically from natural ecologies of scale that support life to capitalist ecologies that function beyond limit and threaten death. In this way, the current globalization of neoliberal capitalism, which institutes classist, racist, sexist, and speciesist oppression, is a sort of biocidal, or as I ultimately argue elsewhere (Kahn, 2006), a zoöcidal agent.

In response to the evidence of planetary ecocide, biocide, and zoöcide, critical educators have begun to wonder if global institutions are capable of interpreting the idea of the "limits to

growth" (Meadows, Randers, and Meadows, 2004) in any fashion beyond an open-market neoliberalism. Again, in its most egalitarian form, sustainable development is offered as a political and economic platform that can generate wealth among the poor (and rich), raise living standards for all, and protect the environment. Yet as the environmental theorist Ted Trainer notes, the mean present standard of living enjoyed by those across the planet is already estimated to utilize somewhere between two to four times the amount of sustainable resources provided by the Earth proper. Therefore, if the world's population continues to rise toward nine billion people, and if global living standards increase commensurate to the rhetoric of sustainable development boosters, it can be reasonably calculated that in order to have a sustainable planet by the year 2070, it will be necessary to have technoscientific advances capable of enabling sixty times as much production and consumption as is presently maintained (Trainer, 2002). Further, future sustainable industries could afford to generate only one-half to one-third the amount of their counterparts' present environmental costs (Trainer, 2002). But according to the United Nations Environment Programme's *GEO-3* report, a vision of continued growth of this kind is consonant only with planetary extinction: either great changes are made in our global lifestyle now or an irrevocable social and ecological crisis will grip the world by 2032 (United Nations Environment Programme, 2002).

**The Promises and Costs of Education for Sustainable Development?**

> 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

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, 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 (United Nations Conference on Environment and Development, 1992, p. 2).

In 1994, 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" (*http://www.earthcharter.org/innerpg.cfm?id_page=95*). 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 socioeconomic/political problems together in one light and demanding long-term, integrated responses to the growing planetary social and ecological problems.

It was hoped that at the 2002 Earth Summit meetings in Johannesburg, South Africa (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.[5] 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 NGOs [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. Instead, education for sustainable development was promoted as a new crucial educational field to be integrated across the disciplines and at all levels of schooling.

The critical environmental educator Edgar González-Gaudiano (2005) 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" (p. 244). For his part, Bob Jickling (2005) is 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. 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" (Illich and Verne, 1981). 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.

The next decade will ultimately decide whether education for sustainable development is little more than the latest educational fad, or worse yet, that it turns out to be nothing other than a seductive pedagogical "greenwash" developed by and for big business-as-usual in the name of combating social and ecological disasters. Due to the inherent ideological biases currently associated with the term "sustainable development," the decade now underway demands careful

attention and analysis by critical educators in this regard. Specifically, educators will need to explain how, and if, notions of sustainability can critically question the various recipes for disaster (in all of their left, center, and rightist formulations) that are the well-established social and human development models (in this respect, see Gadotti, 2008). On the other hand, if education for sustainable development is utilized strategically to advance a radical ecopedagogy (Kahn, 2008), it could be the boost that education desperately needs in order to finally begin to adequately deal with the apocalyptic demands now being wrought upon society by planetary ecological crises. In this way, what has been heretofore known as environmental education could at last move beyond its discursive marginality and a real hope for an ecological and planetary society could be sustained through the widespread development of radical socioeconomic critiques and the sort of emancipatory life practices that could move beyond those programmatically offered by the culture industries and the State.

**Pushing Forward with Ecopedagogy**

> 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.
> – Paulo Freire (2004)

Though still relatively nascent, the international ecopedagogy movement represents a profound transformation in the radical political project that was derived from the work of Paulo Freire known as critical pedagogy.[6] Ecopedagogy seeks to interpolate quintessentially Freirean aims of humanization and social justice with a future-oriented ecological politics that radically opposes the globalization of neoliberalism and imperialism, on the one hand, and which attempts to foment collective ecoliteracy and realize culturally relevant forms of knowledge grounded in normative concepts such as sustainability, planetarity, and biophilia, on the other. While Paulo Freire was himself at work on a book of ecopedagogy upon his death in 1997, and important books such as Francisco Gutierrez and Cruz Prado's *Ecopedagogy and Planetary Citizenship* (1999) have thus far been published to wide acclaim in Portuguese, ecopedagogy should not be dogmatically reduced to the theories or practices developed by any particular set of individuals. Rather, akin to the World Social Forum and other related forms of contemporary popular education strategies, the ecopedagogy movement is best perceived as a loosely knit, worldwide association of critical educators, theorists, non-governmental and governmental organizations, grassroots activists and concerned citizens engaged in ongoing dialogue and political action that is attempting to develop ecopedagogical praxis in relation to the needs of particular places, groups, and time periods.

Ecopedagogy began in a Latin American educational context, growing out of discussions conducted at the first Earth Summit, held in Rio de Janeiro, Brazil in 1992, in which movement intellectuals desired to make a systematic statement about the interrelationship between humanity and the Earth and formulate a mission for education to universally integrate an ecological ethic – a document that would eventually be ratified as the Earth Charter in 2000. In 1999, the Instituto Paulo Friere under the direction of Moacir Gadotti, along with the Earth Council and UNESCO, convened the First International Symposium on the Earth Charter in the Perspective of Education, which was quickly followed by the First International Forum on

Ecopedagogy. These conferences led not only to the final formation of the Earth Charter Initiative but to key movement documents such as the Ecopedagogy Charter, as reiterated in Gadotti's essay Pedagogy of the Earth and the Culture of Sustainability (2000). Gadotti and others in the ecopedagogy movement have remained influential in advancing the Earth Charter Initiative and continue to mount ecopedagogy seminars, degree programs, workshops and other learning opportunities through an ever-growing number of international Paulo Freire Institutes.

As a form of critical theory of education, ecopedagogy can work at a meta-level to offer dialectical critiques of environmental education and education for sustainable development as hegemonic forms of educational discourse that have been created by state agencies that seek to appear to be developing pedagogy relevant to alleviating our mounting global ecological crisis. While environmental education strategies undoubtedly accomplish much that is welcome and good from an ecopedagogical perspective, ecopedagogy questions (especially within the context of the United States) the ways in which environmental education is often reduced to forms of experiential and outdoor pedagogy that deal uncritically with the experience of "nature" proffered therein – an ideological zone of wilderness representations that are potentially informed by a mélange of racist, sexist, classist and speciesist values. Further, ecopedagogy has begun to pose problems into the way environmental education has become tethered to state and corporate-sponsored science and social studies standards, or otherwise fails to articulate the political need for widespread knowledge of the ways in which modern society and industrial culture promotes unsustainable lifestyles, even as it remains marginalized in the research, teacher-training and educational leadership programs of graduate schools of education.

Ecopedagogy also maintains a critical relationship to the ongoing UN-sponsored Decade of Education for Sustainable Development (2005-2015). Ecopedagogues hope to utilize education for sustainable development to make strategic interventions on behalf of the oppressed, but ecopedagogy also attempts to generate conscientization upon the concept of sustainable development proper and thereby uncloak it of the sort of ambiguity that presently allows neoliberal economic planners in either their aggressively imperialist or Third Way economic/political variants to autocratically modernize the world despite the well-known consequential socio-cultural and ecological costs.

Freirean critical pedagogy is synonymous with its popular literacy campaigns[7] on behalf of democratic justice and ecopedagogy accordingly seeks to develop at least three varieties of ecoliteracy throughout society in the name of a more just, democratic and sustainable planetary civilization: the technical/functional, the cultural, and the critical. Taken together, these three forms of ecoliteracy should be seen as holistically complimentary to one another, overlapping, and not in a hierarchical, logical, or linear relationship.

Functional, or technical, ecoliteracy is largely congruent with what is often referred to in contemporary educational literature as "environmental literacy." It involves goals of learning to understand basic scientific ecology, geology, biology and other scientific insights to the degree that they are relevant to social life. Technical ecoliteracy also involves, at more advanced levels of research, knowing how societies can affect ecological systems for better or worse. At the immediate local level, this accords with bioregional literacy (Sale, 1985), but ecopedagogy should aspire for ecoliteracy into the ways in which the local, regional and global interact such as through work being done on critical rural literacies (Donehower, *et al.*, 2007) or critical place-based literacy (Gruenewald and Smith, 2007). This moves us towards generating cultural ecoliteracy.

As the ecological educational theorist C. A. Bowers has outlined throughout his wide body

of work (see *http://www.cabowers.net*), diverse cultures often maintain manifestly different epistemological relationships to nature, and have also developed varying anthropological perspectives on life that can be either more or less sustainable as a result. Hence, in the move to a second-order of cultural ecoliteracy, Bowers's work problematizes attempts to universalize and institutionalize ecoliteracy as functional forms of environmental knowledge that accord only with Western science and citizenship values. While ecopedagogy should carefully articulate the complexities of the Western liberal tradition and dialectically illuminate the manner in which Enlightenment individualism developed as an emancipatory form of counterhegemony, ecopedagogy should also be informed by Bowers's attempt to describe how a rigorous cultural ecoliteracy requires knowing why cultures centrally predicated upon Western individualism tend to produce ecological crisis through the pervasive homogenization, monetization and privatization of human expression – what he has termed "the enclosure of the cultural commons" (Bowers, 2007).

Against the progressive enclosure of culture and nature, Bowers calls for ecoliteracy 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 and ecopedagogy similarly shares an abiding interest in preserving and supporting traditional ecological knowledge. Additionally, in an age now characterized by the rampant globalization of cultures, Bowers's development of a form of ecoliteracy that seeks 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 is valuable and to be commended.[8]

Ecopedagogy therefore seeks to militate for cultural ecoliteracies that can produce multiculturally-relevant knowledge of how diverse cultures differ in their ways of relating to and understanding nature's order, how they may interact with one another in ecologically and educationally beneficial ways, and how they may learn to manifest cultural action for ecologies of freedom. This would include understanding, for instance, the manner in which: 1) cultures are built out of *foundational cosmologies* that may work ideologically in ways that are either more or less sustainable to life, 2) *develop technologies* that are more or less appropriate to the support of biological diversity and social flourishing across history, and 3) *organize their collective knowledge* via traditions and institutions that are either more or less democratic and integral to the daily life experiences of the people and places such knowledge is meant to support.

Lastly, while aspects of a critical ecoliteracy are clearly implicated in deriving rigorous elements of cultural ecoliteracy (especially when the culture is one's own), ecopedagogy intends a third-order critical ecoliteracy to accord with Freirean readings of literacy as inherently implicated within socio-cultural relations of power and politics. Therefore, in the particular example of Western society, a critical ecoliteracy would mean (amongst other things) understanding: the "dialectics of justice" (McLaren and Houston, 2005) between the Green and Brown ecopolitical agendas, the historical roles that waves of colonialism and imperialism have had in constructing society and nature; the ways in which industrial capitalism (including modern science and technology) has worked ecologically and anti-ecologically on the planet both locally and globally – including on human societies, demanding ecosocialist pedagogy (Hill and Boxley, 2007); 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 way in which ruling-class culture and politics now terrorizes planetary life through obscene militarism whilst marginalizing, intimidating, jailing as "ecoterrorists," and sometimes even

murdering ecological freedom fighters such as the Nigerian Ogoni movement's Ken Saro-Wiwa and Chico Mendes, the Brazilian rubber tapper union leader. But Freirean critical literacy always incorporates positive and active dimensions as well, hence a critical ecoliteracy as deployed by ecopedagogy would ultimately attempt to mobilize diverse peoples to engage with culturally appropriate forms of ecological politics and to engage in movement building on these issues through critical dialogue and constructive alliances (for example, see Best and Nocella, 2006). In this way, people and groups can then recognize their own ecopedagogy as a form of ethical epiphany that serves to individuate the state of planetary ecology as a whole within a given historical time period. Accordingly, it is the hope of ecopedagogy that such epiphanies will contain within themselves a cosmos of transformative energies, untapped life forces, and other liberatory potentials capable of aiding others in the reconstruction of society on the way to a more peaceful, harmonious, and beautiful world for all creatures great and small. Ecopedagogy is thus a total liberation pedagogy for sustaining life. Wherever it appears to take forms that appear overly complicit with forces that attack radical biophilia, one deals not with it but its sustainable development doppelganger.

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**Notes**

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[1] Ballmer is the CEO of Microsoft Corporation and was recently ranked as the 24th wealthiest individual in the world by Forbes.com (Online at: *http://www.forbes.com/lists/2006/10/Rank_1.html*).

[2] These occur about 300 miles north of New Orleans at what is called the Old River Control Structure. Due to numerous near failures of the structure, an auxiliary structure was built nearby in 1996.

[3] Part of the blame for this must be the inability of environmental education to have wide influence as a field. While there are many reasons for this, environmental education's tendency to focus on outdoor, experiential pedagogy, particularly premised on essentialized views of wilderness and nature, has helped to marginalize it further.

[4] 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* (Steinfeld, *et. al.*, 2006). In this respect, the ecomodernist "clean tech" guru, Al 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.

[5] For coverage critical of the Bush administration's hand in the World Summit for Sustainable Development, see the stories dated August 26 to September 6, 2002 on my weblog at *http://getvegan.com/blog/blogger.php*. On Annan's speech, see "Sustainable Development Summit Concludes in Johannesburg: UN Secretary-General Kofi Annan Says It's Just the Beginning," online at *http://www.un.org/jsummit/html/whats_new/feature_story39.htm*.

[6] For background on critical pedagogy, see The Paulo and Nita Freire International Project for Critical Pedagogy, online at: *http://freire.mcgill.ca/*.

[7] While I cannot take it up here, Freirean literacy involves the dialectical engagement of continually "reading the world" and "reading the word" (Freire and Macedo, 1987, p. 35). In this respect, the ecoliteracy desired by ecopedagogy involves empirical and lived action-based literacies but it also requires ideologically critiquing and deconstructing various forms of cultural texts – including print materials like books, magazines, and newspapers articles; video texts such as films, television shows and other videographic forms; pictographical representations ranging from museum art pieces to t-shirt images; and digital texts of the Internet and association information-communication technologies. These latter forms of critically "reading the word" have been organized into movements that contribute meaningfully to the ecoliteracy project, such as for ecocriticism (see Kahn, 2007), on the one hand, and critical media literacy (Kellner and Share, 2007) or multiple technoliteracies (Kahn and Kellner, 2005hihes), on the other.

[8] For two additional sources on this, see Shiva (2006) and Esteva and Prakash (1998).