The ‘great moral challenge’ of social ecology for an ‘education revolution.’

Phillip G. Payne
Monash University,
Faculty of Education.
PO Box 527
Frankston, Victoria, 3199
Australia

Bio

Phillip is an Associate Professor in the Faculty of Education at Monash University, Course Director of Sport and Outdoor Recreation and Research Leader of the Movement, Environment and Community (MEC) Group. He is a member of the International Editorial Boards of *Environmental Education Research, Journal of Environmental Education* and *Australian Journal of Environmental Education.*

Abstract:

Political context and national agonizing about it are local ‘stepping stones’ for the parochial concerns expressed here about the need for a globalized educational response to what now warrants the conclusion of the ‘ecologically problematic human condition’ and, therefore, the education sector’s complicity. Leading into the 2007 Federal election in Australia, the then Leader of the Opposition, now Prime Minister, promised an ‘education revolution’ and declared that climate change presented a ‘great moral challenge.’ The previous Prime Minister was an ‘avowed sceptic’ of the scientific consensus that climate change was human-induced. Research, the role of the University and by implication, the purposes of education, study of curriculum and pedagogical inquiry were, emphatically, undermined.

Different values, ideologies and policies about Australia’s national interests and global responsibilities were displayed conspicuously. As, therefore, was the need for the university sector to break its silence, ambivalence, evasion or ignorance about what, indeed, might be a clarion call for those in education, and research-led-teaching, to question the largely anthropocentric philosophy of education and, in doing so, examine that propositional culture’s human-centred presuppositions about what, inescapably, is nothing less than an ecologically problematic human condition. Against this ecocentric need for a re-moralized approach to educational reform, and reframing of the purposes of education, concepts from environmental philosophy are (re)introduced here to generate an expanded vocabulary relevant to a ‘revolutionary’ eco-moral approach to education, policy, curriculum, pedagogical and research development.

Major paradigms, valuings and values appropriate to the educational ‘reconciliation’ of inner, social and outer ‘natures’ in relation to the ecologically problematic human condition are outlined, as is the pressing need for educators to contribute more cogently to a durable intergenerational environmental ethics.

Introduction: The changing climate of educational responsibility

Posing, and probing, the question of the education sector’s complicity in the so-called ‘ecological crisis’ is, at first blush, an unreasonable one. As it also is for educators and school communities to

take responsibility for, and solve, the ever expanding number of almost intractable 'crises' and 'risks' existing 'out there.' Climate change, the escalation of mental health problems, the alleged obesity 'epidemic,' the scourge of drugs, and bullying are all (western, industrial) cultural markers of the individualized and intensified challenges many young people are struggling to cope with (Elliot & Lemert, 2006) and about which they in Australia feel powerless (Bentley et al., 2004). And, of course, there is the chronic 'blame game' played out in the media about low levels of literacy and numeracy, and teachers declining morale and increased scrutiny and accountability. The persistent demands by politicians, employers and parents for 'fast' solutions to these crises from the formal schooling sector and, by implication, teacher education institutions may, indeed, obscure the pernicious effects of a broader range of historical, cultural and ideological sources of these myriad crises.

In the case of the ecological crisis, another misnomer perpetrated by the media, we are confronted with overwhelming evidence about the heating up of the globe (for example, Stern, 2006, various Intergovernmental Reports on Climate Change, Department of the Environment and Heritage, 2006, Garnaut, 2008). Climate change, however, is one *only* consequence among many (Diamond, 2005, Flannery, 2005, Nielsen, 2005) of humanity's economic and industrial investment in Nature's[i] three hundred year-long objectification, abstraction, disenchantment, abstraction, exploitation, commodification and, most recently, textualization (for example, Barbour, 1973, Bookchin, 1982, Harvey, 1996, Weiss & Haber, 1999). The current existential anxiety in Australia about climate change, largely as a result of several years of severe 'drought' and volatile 'bushfire' seasons, was conveniently rationalized in pre-election commentary by politicians, the media and the public as local aberrations in the weather rather than part of extended national, industrial and global trends, as explained by Flannery, Diamond and Nielsen.

In the lead up to the federal election in Australia in 2007, the Leader of the Opposition declared that climate change presented the 'great moral challenge of our generation' -- for politics, and to the Australian way of life (and, presumably, its sense of values, traditions, identity, functions and purposes). This grand declaration followed his earlier promise, if elected, for an 'education revolution.' The incumbent Prime Minister, 'with no irony,' publicly exhorted Australians to 'pray for rain' to bring to an end the decade-long 'drought,' questionably another ideologically-driven misnomer about 'nature' perpetuated by many in the media.

Stern's Report (2006) (and others) created a political storm in many countries following its release. An unabashed Stern (p. i) concluded, 'Climate change presents a unique challenge for economics: it is the greatest and widest-ranging market failure ever seen.' Even the most sanguine or apathetic citizen might pause momentarily to contemplate what Stern's (and others') conclusions say politically about the 'systems' through which we live our lives now, in the past and for the future. There can be no doubt that the reaction to the Stern Report fuelled the 'unmanageable horror' prognosis from Bauman's (2006) diagnosis of liquid fear. Yet, that same economic 'free market' of fear has already raised costs for basic needs –water, food, house insurance, and so on. The largely hidden three hundred year industrialized 'injustices' to the environment remain a source of social, and increasingly, global injustices, yet their continued toxicity is rarely acknowledged politically, or even in the so-called critical study of education. Post election, the much awaited Garnaut advisory report to the new government was alarmingly pessimistic and conceded that the proposed global response to the Stern Report severely underestimated the cuts required to greenhouse emissions. Time is running out. And, apparently, much quicker than even the most pessimistic of predictions, including Stern's.

Other-than-economic/political discourses provide hope. Even 'education,' and curriculum, normally 'disciplined' and 'surveillanced' by the State, retains a degree of possibility. Strong calls were made at a series of UNESCO conferences in the 1970s for interdisciplinary responses in education to the then acknowledged environmental crisis (Palmer, 1998). But, we seem to have learned little even when the magnitude of the ecological problem is 'front page' news. Not long after the release of the Stern Report, in Australia the Curriculum Studies Framework of Studies of Society and Environment (SOSE - one of the few efforts promoting interdisciplinarity) was dropped

from the National Curriculum – a move supported by both sides of politics with the aim of returning year 9/10 studies more rigorously to the disciplines of, for example, economics, history and geography. This 'revolution,' albeit a relatively minor one, harshly signalled a significant rise in the temperature in the changing climate of educational (ir)responsibility from both erroneously named 'sides' of politics. Suspicion lingers.

Will Garnaut's findings, or the Stern Report, both written by prominent economists after being commissioned by the Australian and UK Government's respectively, be included in the 'new' study of economics? Or, will the 'new' History include Diamond's (2005) case study of 'Mining Australia,' noting his internationally applauded comparative and cultural-historical study of nations that have, or are, 'choosing to fail' due to their environmental habits, relations, lifestyles and policies? Or Tim Flannery's (2005) historical account of our 'weather making' and 'forecasting' of the impact of climate change? Might Peter Singer's (2004) 'ethics of what we eat,' a socio-environmental ethics and politics of what we ingest globally in the 'everyday,' find a place in the new geography curriculum, or earn a mention next to the fearful 'obesity epidemic' in the health, biology and physical education curricula?

The 'culture wars' are well known to Australian politics, as are the 'literacy wars' (Snyder, 2008) and 'history wars' in education circles. The not so visible 'geography wars' in schools were also declared prior to the election by the conservative Federal Minister of Education. Hot on the heels of the demise of SOSE, the study of Geography was accused of being 'too issues-led' with environmental studies and political studies being viewed by the conservatives as masquerading for what traditionally was a rigorous academic study. Geography's apparent demise in academic legitimacy (but not currency) was traced or blamed on the interdisciplinary influence of SOSE. For the previous Prime Minister, '…geography is geography, not place and space.' A number of studies about pre-service teacher education in Australia paint a worrying picture about the absence of environmental education and, if it does exist, the downplaying of pedagogical content knowledge and lack of consideration to other factors that prevent or dilute the development of environmental 'literacy' (Miles, Harrison & Cutter-Mackenzie, 2006).

Sadly, many young Australians are concerned about the environment but feel 'disempowered' and 'unable to make a difference' (Bentley et al., 2004). A significant aspect of this generational problem is that young Australians move from a positive image of the future to a negative one between the ages of 5 and 12 with themes such as environmental issues and health problems dominating their increasing pessimism (Fleer, 2002). There is, indeed, a crisis of hope in the younger generation that beckons for an eco-moral education revolution. Similar to Bentley et al's (2004). Australian Bureau of Statistics (2004) data show that household concern for the environment declined from 75% in 1992 to an all time low since records have been kept of 57% in 2004. The greatest decrease in concern was among young Australians aged 18-24 years. In 1992, 79% of young Australians were among those most likely to be concerned. This figure dropped to 57% in 2002 - ranking second lowest by age cohort only after elderly Australians.

These facts, issues and questions raise the 'invisible' longer-term problem of the diminishing prospects for intergenerational environmental ethics (Payne, 2005a,b). It inspires the general theme of this article about the education sector's potential role and extent of complicity in the ecologically-problematic human condition.

In the following pages, I dwell on the moral and political contexts of the environmentally and ecologically problematic condition while identifying the need for an expanded vocabulary from which re-natured conversations might proceed, noting the persistently marginalized but available environmental education discourse. I (re)locate the anticipation of that expanded vocabulary into the broader moral-political context where diametrically opposed 'national interests,' ideological values and different intergenerational legacies are now very clearly on display to the public.

Central to a reinvigorated discourse of education is the need for a paradigmatic shift from the anthropocentrism and androcentrism of almost all discourses in education to an ecocentric frame of scholarly inquiry, pedagogical practice and research endeavour. My aim in elaborating these contexts is to clarify how the public are privately positioned and governed 'environmentally.' I

focus on a number of axiological considerations relevant to the inevitable contestation of key environmental paradigms, concepts and approaches to their valuation and significance in a re-moralized and re-natured education. Along the way, there is an oversupply of references so that the reader can address the limitations of this ambitious sweep in a short article, as this is – it being a sensitizer and intellectual resource for that urgently need conversation within what we call the discourse of education.

The moral challenge

The global and local consequences of chronic environmental degradation and persistent devaluation of nature described by Stern, Diamond, Flannery and Nielsen, and others, flag the existence of an ecologically precarious and crisis-like human and social condition. This condition might well assume the form of what Zygmunt Bauman (2006, p. 72) characterized as the 'horror of the unmanageable.'[ii] Indeed, Bauman in hinting for a global socio-environmental ethic and, inevitably, a cross-cultural and intergenerational ecological morality, pleads for a '…new compact between intellectuals and the people' (p. 177) – a call that demands educators reflexively interrogate the complicity, complacency or contestation of education grappled with in this article.

What conceptual apparatus and intellectual resources are required of educators, teacher educators and educational researchers to begin a conversation about some solutions to the ecologically problematic human condition? How might policy, pedagogical, curricula and research development be re-sensitized in a socially and environmentally 'just' direction?[iii] Despite the slipperiness of much educational jargon, what different 'ways of knowing' and othered 'authentic learning' experiences in, for example the 'thinking curricula' or 'productive pedagogies' can teachers, schools and their communities 're-activate?' Does the philosophy of education need to be re-invented? What moral sensitisations and political sensibilities are owed the educated person and educated society if we are to be aware, alert and active, or ecologically 'literate'? How, in the next generations, do we 'maximize the potential' of each and all learners if we choose to ignore or evade the ecological despoliation enveloping the prospects of each of these 'individuals?' Indeed, what role does the education sector have in 'managing' the consequences of future risk, irrespective of climate-change being human-induced or not? If there is a role, or even a dilution of existing complicity, what are, or should be, the socio-ecological purposes of education, schooling and teacher education given the fraught scenarios of 'ecological risk' (Beck, 1995) and the unmanageable melt-down of 'liquid fear' (Bauman, 2006).

Diamond's (2005) historical and environmental analysis of how 'societies *choose* to fail or survive' (italics mine) culturally mirrors Bauman's moral 'reminder' of the 'horror' of the unmanageable whose source he traces to the combination of 'anthropomorphic fallacy' and 'moral lag' evident in the ethical emptiness of the modern period. If moral lag in one ingredient of the 'great moral challenge' to be addressed in an 'education revolution,' any revisioning of schooling in a socio-ecological direction that might redress the ecologically problematic human condition requires, at least, the incorporation into policy, curricula and pedagogical practices some of those hitherto ignored concepts readily available from the discourses of environmental philosophy and ethics. The mainstream discourse of education has sporadically pursued links between the philosophy of education and environmental philosophy (for example, Brown, 1987, Bowers, 1987, Jickling, 1996, Bonnett, 2004) and environmental studies and education (Orr, 1992). More specifically, since the 1970s, when the field of 'environmental education' was formalized (Palmer, 1998), various forays into the philosophical, theoretical, pedagogical and methodological development of environmental education have occurred (eg. Fien, 1993a,b, Robottom & Hart, 1993). Numerous conceptual drivers and debates have 'trickled through' from those texts to dedicated journals like *Environmental Education Research, Australian* (and *Canadian* and *South African) Journal of Environmental Education* and the *Journal of Environmental Education.* Notwithstanding the paralysing advent of yet another discourse in education, that of education for

sustainable development, progress of the field of environmental education research has been appraised (Reid & Scott, 2006) and assessed (Hart & Nolan, 1999, Rickinson, 2001).

The mainstream discourses of education, educational research and teacher education literature has Diamond-like 'chosen' to ignore, or resist, or remain disinterested in environmental philosophy and environmental education. This stasis in education thought, policy and practice has ominous (socio-ecological) consequences for any ongoing cultural conversation about the great moral challenge presented by climate change or the revolution in education required to undertake and participate in that conversation.

But, before key concepts from environmental philosophy and ethics are (re)introduced to re-nature education discourses, it is worth identifying some of the more general but key social, political and educational 'values discussions,' beyond the disciplined demise of SOSE, that should be of interest in addressing intergenerationally the changing climate of educational responsibility.

The de/re-valuing of intergenerational ethics; a snapshot of choosing to be ir/responsible

Sir Nicholas Stern's report alerted the globe to its morally, socially, politically and culturally somnambulant approach to sustainability, a term that has attracted considerable debate in environmental education.[iv] Stern's findings, piercing views about the failure of the 'market' and recommendations for economic change, unsettled many politicians, business leaders and 'ordinary' people. Further public suspicion was aroused about the neo-liberal mantra of 'choice' in a manner consistent with those muted criticisms of 'free' society and the 'politics' of making choices in everyday life (for example, Ginsborg, 2005).

The scepticism and prayer offered by the ex Prime Minister invited the public to 'choose,' for example, between the Australian Broadcasting Commission's 'decision' to screen Martin Durkin's (edited and discredited) 'documentary' *The Great Global Warming Swindle* to 'balance' the earlier showing of Al Gore's *Inconvenient Truth.* Moreover, the ex Prime Minister's dismissal of the conclusion reached by 2500 of the world's eminent scientists that climate change (and therefore its consequences) was human induced also said, indirectly, a great deal about his devaluing of scientific knowledge and, of course, the role of universities, research and validated claims on 'truth,' or, at least, intelligence for wise and prudential policy-making.

The 'minor' editorial of a leading Australian broadsheet, The Age (25 April, 2007) opined, '…when Mr Howard (the previous Prime Minister) seeks to divorce prosperity from environmental sustainability he is shirking a moral responsibility that goes far beyond the next term of office.' That damning editorial about the ex Prime Minister's ecological and intergenerational irresponsibility, over 'short,' 'long,' 'slow' and 'fast' policy time appeared on the same day as 'ANZAC Day' -- the annual commemoration of Australian and New Zealand soldiers' involvements in a number of 20th Century world wars. The morally enlightened 'eco'editorial outlined above was accompanied by a 'lead' editorial that solemnly 'praised' the legacy bequeathed to contemporary Australians by our earlier generational involvements in various wars on foreign soils. The ex Prime Minister and the vast majority of Australians associate very strongly and sincerely with those legacies and values of 'freedom,' 'democracy,' 'hardship,' 'battlers,' 'mateship,' 'egalitarianism,' 'youthfulness' and 'sacrifice.'

When the two editorials are juxtaposed, they point to the ways in which the past, present and future have been morally arranged and symbolically 'ordered,' and (re)structured practically in the ordinariness of the mundane 'everyday.' However, while an increasing number of young Australians rightly are proud of the ANZAC tradition and its 'values' legacy, they feel powerless about the 'war' on climate change, amongst numerous other crises effecting them, as listed in the Introduction. The intertextual meaning of the two editorials points emphatically to a moral/values - hierarchical position where in the human condition, according to context and circumstance, one set of values can be elevated disproportionately through time and space (and in place) by political means and processes. One 'position' can or is socially accelerated and exaggerated via its (political leaders) chosen/preferred 'media' of governmentality (and disciplining). An 'other' position, such

as obfuscating the environmentally problematic condition, be it human-induced or not, irrespective of the evidence, is the source of the 'moral lag' and 'moral insensitivity' that Bauman (2006, p. 91) lays at the heart of the ethics of modernity and the 'abyss' of postmodernity. In regard to the socio-environmental human condition, it might well be that its lesser valuing, despite all the warnings over time, place and global space, and 'irresponsibility' is, as one of the pre-election editorials concluded, '…time always has the last word,' a reminder of Bauman's fear of our choosing the 'horror of the unmanageable.' Now, some months after the election, the front page of The Age quotes from Garnaut, 'Time running out on climate' (The Age, 22 February, 2008).

The challenge to education and educators 'deepens' its own void and extent of complicity because time might well be running out. Stern, in a language different to Bauman's, concluded that the consequences of climate change in ten years time will border on the irreversible if action is not taken now. But why, intergenerationally and educationally, has the world morally, practically and politically waited for such a stern wake up call to inform the everyday choices we make politically about our future global prospects?[v]

The preceding thoughts about the ex Prime Minister's morally selective devaluing of the ecology we bequeath to the next generation(s), via his reduction of ecology (and social ecology of the consequences of climate change) to 'drought' - fuelled by scepticism about the science of climate change and, therefore, claims on 'truth' by universities and researchers, clearly oversimplifies a much broader and extremely complex philosophical, theoretical and practical matter, given the above reading list. But the simplification does serve as an indicator of how politically we are 'morally' (re)configured, ordered and 'corrected' ethically, including the political silences (Sim, 2007) in educational theory and its development. On the other hand, the then Opposition Leader, now Prime Minister, has clearly shown his hand and, potentially, offers a different configuration for a moral, social, political and ecological re-ordering of an education revolution.

With climate change occupying centre-stage, posing questions about intergenerational environmental ethics, ecopolitics, education and the role of schooling must proceed. Or, if these questions for education and the ecologically problematic human condition are not probed, we should not, or can not, be critical of governments on either side of politics that 'crisis-like' legislate 'fast' for the 'right' individual and collective 'environmental' and 'sustainable' solutions, behaviours and values – yet another unfreedom many ANZACS might be troubled about in an increasingly, self-contradicting politic about the democracy, freedom and 'choice' they fought and died for.[vi]

So having digressed into a broader moral-political-historical account of the selective devaluing or revaluing of ecological and intergenerational legacies, as framed by nascent developments in meta-environmental ethics, or social ecology, the conversation about an eco-moral and political approach to education can proceed. The concepts to be introduced in the following sections point the way to this ethical ontology from which the epistemological and pedagogical implications in policy, curriculum and research efforts can be discussed and debated with greater clarity and confidence than what currently has occurred, or felt to be available.

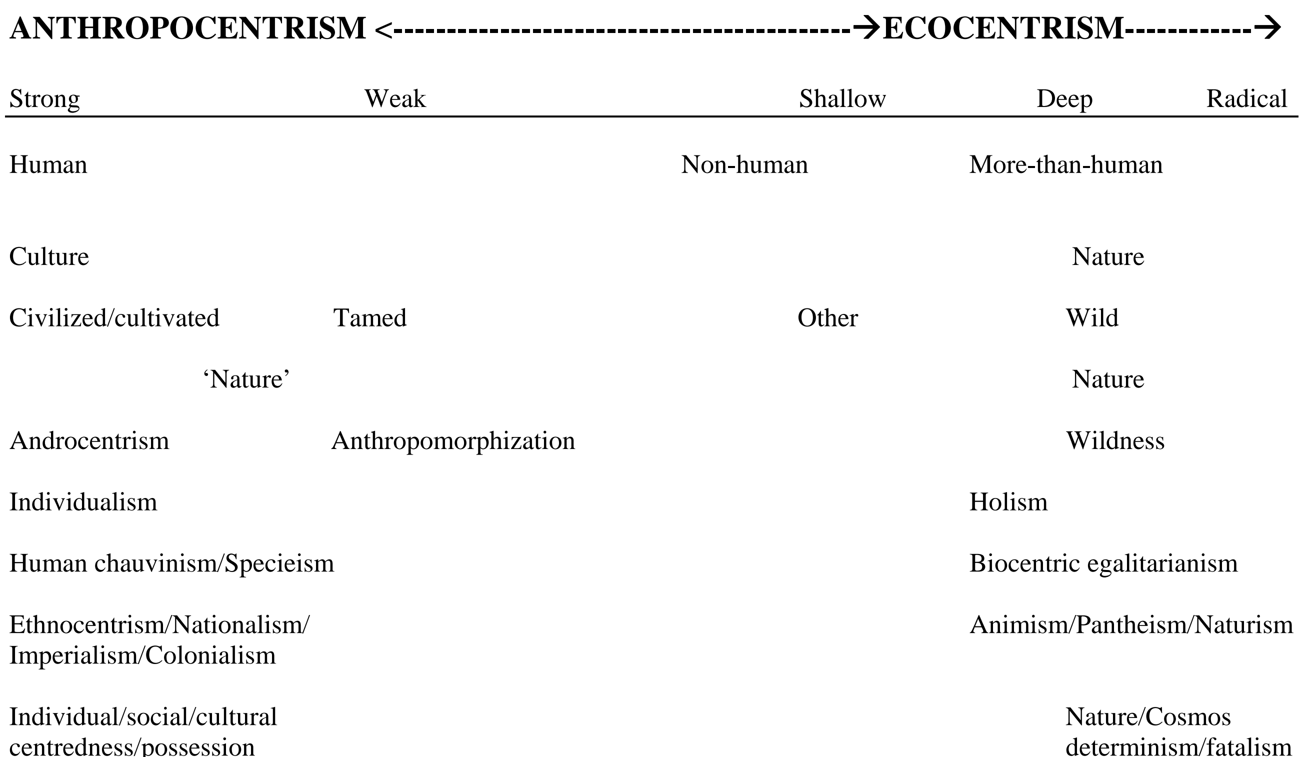
Vocabularies of an eco moral education

There is a 'rich' but marginalized evolution of the 'environment' in educational discourses in Australia -- from 'nature studies' (for example, Leach, 1929, in particular his Appendix 1, a prescient 'manifesto') to 'nature as guide' (Gatty, 1958) to 'conservation education,' to the heady days for universities in many western countries surrounding UNESCO's fostering in the 1970s of a more critical, inter/multi-disciplinary and experiential approach to environmental education (Robottom, 1987, Fien, 1993), including its piloting in pre-service teacher education at Deakin University in the late 1970s. Many interesting, innovative and ad-hoc grass roots examples of environmental education can today be found in schools, particularly in primary schools.

However, it can reasonably be asserted that both mainstream education and environmental education policies and discourses, locally and globally, were, again, ‘put on notice’ by Stern’s report. The preoccupation with ‘climate change’ is, in reality, somewhat misleading for educators at the ‘grassroots’ wanting to ‘make a difference.’[vii] The politics of climate change are, in many respects, diversionary and require de and reconstruction if any educational conversation is to advance, anticipate and respond ‘practically’ to what Bentley et al. (2004) and, for example, Kenway & Bullen (2002) have accurately diagnosed as lying at the mundane, everyday heart of ecological despoliation, namely (over)consumption (Payne, 1997, 1999). Nielsen’s (2005) work on critical global trends extends well beyond ‘climate change’ and includes; the population explosion, diminishing land resources, diminishing water resources, destruction of the atmosphere, approaching energy crisis, social decline and conflicts, and increasing killing power. Diamond’s (2005) analysis of why societies collapse, named ‘ecocide,’ lists eight categories of human cause and choice: deforestation and habitat destruction, soil problems (erosion, salinization, and fertility), water management, overhunting, overfishing, introduced species effects on native species, human population growth, and increased per-capita impact of people.

New, or different, paradigmatic vocabularies are available from which these diagnoses, forecasts, debates, research and educational implications can be framed. Of interest are how the central concepts of *‘anthropocentrism’* (humans as the superior species, and at, the ‘centre’ of the universe) and *ecocentrism* (the ecological or relational integrity of the human and ‘more than human’ and ‘other’ than human ‘worlds’) provide a ‘way into’ making meaning of many of the many moral stance/value positionings and existential conditions we ‘ordinarily’ occupy or create as teachers, researchers and scholars. Figure 1 is an attempt to schematically represent some of the complex paradigms, philosophical ideas and conceptual debates dealt with in far more detail elsewhere (for example, Hargrove, 1989, Hay, 2002).

Figure 1. Paradigmatic and conceptual orientations to culture and nature: a characterization



Mind		Body
Abstraction/virtual		Relational/grounded
Calculative rationality/ Instrumental reason	Restoration	Earth wisdom
Values hierarchical thinking	Obligations/duties	Intrinsic moral standing Rights
Human over/against nature		Nature over/against humans
Society over/against environments	Social spaces/Urbanscapes/Open spaces	Places Land/seascapes
Culture over/against ecology		Ecology over/against culture
Industrial capitalism/socialism		Ecofascism/fundamentalism
Global/technological	Local	Indigenous/Endemic/Organic
Quarry Supermarket Farm	Gymnasium Zoo Museum Silo	Wilderness Cathedral/Shrine/Sanctuary

If Figure 1 is to be helpful as a reflexive starting point for educators, the tendency to dualistic thinking must immediately be negated. So too the all-too-easily presumed correlation of human language, text, lifeworld and human experience (Payne, 2005b).[viii] These broad representations of differing vantage points have been regularly debated in, for example, *Environmental Ethics*, as might be expected, with numerous qualifications in regard to how they sit along a continuum or spectrum of interpretation and practice; for example, weak anthropocentrism, non anthropocentrism and ecocentrism. And, clearly, perceptions and conceptions of nature as 'real' or a 'social construction,' or both, again have been debated earnestly (for example, Soper, 1995, Soule & Lease, 1995).

The 'relational' nature of human-environment, culture-nature perceptions, actions, interactions, experiences, symbols and forms of association over time, space, place and context figure prominently in the writings of environmental ethicists and environmental/nature philosophers (for example, Fox, 2006, Hay 2002, Pepper, 1993). Key and controversial issues deal with the mind-body split, the I-world (dis)connection, matters pertaining to Figure 1, the 'reality' of nature or 'nature' as social construction, their 'rights' and our duties and obligations to them and/or 'care' extending over human and more-than-human natures, including non-living. Numerous versions of environmental ethics and its philosophizing exist, in 'movements' such as animal liberation, social ecology, deep ecology, ecofeminism, ecotheology, permaculture/bioregionalism, nature writing, and wilderness preservation. There are different political shades of 'green' – light, dark, pink and, even, brown. And, of course, numerous discourses (Dryzek, 1997, Hay, 2002) and approaches to ecocriticism (Garrard, 2004). 'Place' (Cresswell, 2004) and 'sustainability' are attracting great interest.

Despite these differences, what probably unites environmental philosophers, ethicists and educators, and others, is the quest for some 'reconciliation' of 'inner', 'social' and 'outer' natures (for example, in cultural psychology, Melucci, 1996; in poststructural ecological theory, Murdoch, 2006; and in philosophical Grand Theory, Fox, 2006).[ix] How that reconciliation might proceed remains a vexed question, particularly in schooling, where the 'balance' of epistemological or pedagogical strategies and (socio) ontological-ecological 'shifts' needed in 'choosing' for our 'everyday' *being, doing, dwelling, flourishing and becoming* is fraught with moral and political fear, risk, even danger (Ginsborg, 2005) – for children, their families, teachers, schools, and teacher educators.[x]

Beyond referencing some of the key contributors to those concepts and debates, it is worth reiterating the Editor of the *Environmental Ethics*, Eugene Hargrove's (1999) conclusion that after

20 years of that journal, policy makers and educators have failed in their take up of environmental ethics. Here, we now move from a consideration of the broader vocabularies, particularly ecocentrism and anthropocentrism, to a consideration of their links with 'values' and how we are positioned or trapped within various conceptual/linguistic and textual frames and assumptions.

(i) Valuing, subjectivity and eco-subjectivities

Again, in this two-part section on axiological considerations in environmental philosophy and ethics and their implications for education, I risk oversimplifying very complex and, at times, contested matters in outlining some additional conceptual apparatus appropriate to the revisioning of education in a socio-ecological direction.

Typologies of values (and taxonomies) have been formally developed over the past three-decades in the discourse of environmental philosophy via, for example, the key journal *Environmental Ethics.* The non-exhaustive list of terms and metaphors in Figure 1 demonstrate the vastly different ways in which agents, structures, histories, discourses and institutions bestow meaning and, therefore, value upon nature, 'nature' and their various 'environments.' The meaning of the value and, hence, the value of the meaning invite (re)assessment according to the anthropocentric and ecocentric paradigmatic characterizations. In juxtaposing that type of interpretive frame on the ways we create or impose value (or not) on various natures we are, hopefully, able to open up and access for critical reflection where within our perceptions, vocabularies and subjectivities, be they individual or collective, the position(s) we hold to as agents and actors -- in the past, present and future in regard to our identifications, relations, attachments and actions *in, about, with* or for various environments, places, spaces and natures.

For example, religion, listed below as a major shaper of thought and practice, will continue to be a major institutional 'value' in the way cultures and individuals relate to nature. In (Christian) ecotheological circles there has been major debate about the interpretation of Genesis 1:28 in which God gives 'dominion' over nature to man. In the clause immediately preceding 'dominion' we read '…replenish the earth, and subdue it…'. Ecotheologians have interpreted in Genesis 1:28 a 'stewardship' ethic that 'lines up' with the ecocentric paradigm. Some ecotheologians have lamented the dominant 2000 year Christian utilitarian and anthropocentric valuing of nature's 'value.' Taken to the present and in full view of the current crisis of 'climate change', and the Prime Minister's exhortation to pray for rain, the pronouncements and silences of various religions will remain a source of significant interest in addressing the ecologically problematic human condition, including education (for example, Hitzhusen, 2007, Grinter, in process).

All and each typological value is open to different interests, be it the role of ecotheology in education or the study of a river in geography, biology or outdoor education. At a local and 'place' level of perception, language-use and subjectivity, in all likelihood the same stretch of a river will be valued for its affordances differently along the anthropocentric-ecocentric continuum by the engineer, the artist, the farmer, the kayaker, the irrigator and, possibly or potentially, the platypus. While the irrigator might 'see' dam or reservoir, the kayaker demonstrates a pirouette, the artist images the mood of light and the platypus is in home/place.

Space limitations prevent any detailed explanation or justification of the following typology of 'valuings' humans bring to the meanings of natures (inner, social and outer), environments, places and spaces. The preceding two examples are illustrative only of the way a 'new' conceptual apparatus and intellectual resources can be incorporated critically into the mainstream discourse of education, policy, curriculum, pedagogical and research development as part of the 'compact' Bauman, indeed, asks us to now 'manage.' Holmes Rolston III's (1988) 'meaning-level' of valuing is a useful starting point to develop that critically reflective vocabulary but has been qualified and extended for the purposes here of including 'valuings' that might be pre-rational, or bodied and embodied but are still 'meaningful' at the somatic, corporeal layering of ecological subjectivity/experience (see for example, Lakoff & Johnson, 1999, Weiss & Haber, 1999). These valuings are not listed in priority order and, again, can be 'subjectively' assessed differently

according to the anthropocentric and ecocentric continuum. Some focus on the present; others over time; some on a proximal setting and social form or condition of existence; others fluidly over spaces.

Valuings/meanings and their categories overlap and intersect. For example, some 'pre' rational/discursive sources of meaning-making and valuing might include: *impulse/intuition and perception, sensation and sensibility; desire; aesthetic, kinaesthetic and spiritual; emotional attachment, continuity and memory; bodily and societal growth/development/maturation;* and, simply, *existence.* At a rational level of the individual, valuings include: *individual want/preference; subsistence and economic good* and *individual good.* Valuings and their meanings clearly clash – what an individual knows is good for him/herself can be overridden by what she/he wants or prefers. We know it is not good to smoke. At a rational social level, sometimes linked to ideas like democracy and citizenship, valuings focus on; *economic good/growth; social want/preference/desire; tradition, social good* and *place good.* At a more-than-human level of 'othered' and 'wild' valuing, we might find in our meaning-making of that 'world': *religious good, organismic good, species good, biodiversity, ecosystemic good,* and *holism, cosmological good* and *Gaia.* Of course, most of the above will have their 'opposites' or negative valuations.

(ii) Values and the wild

In this second section on critical meaning-making about values in education, the discussion shifts from the ways we intuitively, perceptually and rationally approach, value and give meaning to the world to a description of the values commonly associated with nature. An important caution is offered. A key issue (in Western societies, but particularly USA, Canada, Australia and New Zealand) is the debate about nature being a social construction (Soper, 1995; Soule & Lease, 1995). To some extent the socially constructed nature of 'nature' in the West lies in the slippage and equation of that term with 'wilderness' (which many people 'know,' through experience of National Parks, etc) and conjures or replicates pristine or primordial nature. Cronon (1996) lucidly argued that 'wilderness' is really only a reflection or mirror of our frustrated desire for the natural. Beck argued against the (middle-class) 'escape to nature' via the 'naturalistic fallacy.' Numerous examples of 'nature' appear on television, and 'in the mall' (Price, 1995), and in the literary and visual 'romance' with versions of the European 'pastoral', 'countryside' or 'rural idyllic,' as well as in the wilderness pioneering of the American mind (Nash, 1980).

While there are good reasons to value or critique those 'natures' according to their cultural origins and conditions of availability to city dwellers, the term 'wild' is probably a better starting point from which to consider the anthropocentric and ecocentric continuum and the above 'typology' of valuings. We should remind ourselves about what Nature and natural forms existed in the world prior to human beings and, ontologically, prior to the social constructions of language, art, religion, economics and technology (Hargrove, 1989). A school playground, local gardens, growing vegetables, sandy beach or viewing a magpie on the oval are all relatively 'wild' events in that they contrast significantly with the urban 'normal' of the everyday and, in doing so, serve as an ontological 'reminder', 'memory' or 'signpost' to many of the 'valuings' of nature listed above, as they must then be qualified paradigmatically according to the continuum of anthropocentrism and ecocentrism. Not only do those somewhat 'relatively' natural places and 'open' spaces in the school yard and neigbourhood park contrast with the routinely 'everyday,' their 'wildness' may invite and invoke play, discovery, exploration and imagination or, for some, fear, trepidation and anxiety. In the best traditions of the 'nature writing' genre, Jay Griffith's (2004, 2007) recent 'storying' work acts as a salutary reminder to those confused about the advent of 'nature' into nature and the difficulties of 'choosing' between them. Her account of the confluence of time, the wild and our places within that mix of values-deliberations is erudite

Moreover, for any educational conversation, the preferred term 'wild' is inclusive not only of the 'land' (and its properties and qualities which dominates in the discourse of environmental

ethics and education), but also the inlets, bays, seas, oceans and the air or atmosphere, all of whose inclusion opens up the holistic and wilder possibility of ecocentric values and relational ethics. The 'bush,' 'outback' and 'country' in Australia retain levels of preoccupation in our various cultural narratives, local stories and geo-historical pioneering heroes that far exceeds the representation of our rivers, coasts and seascapes. This bias to the 'land' and its taming of the wild belies the fact that approximately 90 percent of Australians live in the South East of Australia on the coastal 'edge' (Drew, 1994). Our existence on the 'beach' and our 'knowing of it' anthropocentrically waxes and wanes between the iconic bronzed life saver, leisure as freedom and 'playground,' the quest for a 'sea change' and, increasingly, insecurity and a new 'edginess' about the oceans, sea-level rise with storm surge and, presumably massive coastal degradation and loss of property, or cost of protection. Finally, and peering to an intergenerational taming of the future cast in 1969 by Neil Armstrong's famous utterance of 'That's one small step for a man, one giant leap for mankind,' the 'spaceship earth' metaphor has increasingly gained traction in certain quarters, noting Enzensburger's (1974) critique of that non-problematized symbol in that it reinvokes at the level of global ethics and justice, Hardin's infamous Darwinian-like 'lifeboat ethic.' That is, in the future, only a few are likely to prosper from the 'last' (hu)man adventure of the moon's conquest and initial colonization of its nature and wildness/otherness. Yet, the earth's image taken from the spaceship has provided a powerful gathering point for those concerned about the future of the planet.

So, the term 'wild' has additional generic value in theory and in practice that appears to partially bridge the tensions between 'nature' and nature; the social and the environmental; the past, present and future; the mind and body, and the I-we-world whose reconciliation now commands our ethical attention (Fox, 2006). Preceding Griffith's wild poetics, Henry David Thoreau's dictum, in *Walden* (1962), '…in wildness lies the salvation of the world' provides a very useful ecocentric extension to nature of the interest many now pursue in the discursive search for 'otherness' and 'difference.' And there is a literature that seriously has addressed the *other* as including the *wild*, or vice-versa. For example, Gary Snyder's (1999) chapter on 'The etiquette of freedom' is another poetic example in the English-speaking world of the much admired nature writing genre in North America that draws upon the inspirational insights of Emerson, Thoreau, Muir, Leopold, Lopez, and others. Like Abram's (1996) 'spell of the sensuous,' Snyder, also confined by language and its severing from the depths of human experience, invites a far more ecocentrically oriented play on the meanings (and valuings) of terms like wild, nature, wildness, wilderness, as they too are also inner, social and outer expressions and representations of 'freedom's etiquette.' More formally, Robert Briggs' (2001) philosophical deconstruction of environmental ethics highlights how 'wild' thoughts are part of the missing otherness and attention to difference, following Derrida, required in a reconstructed environmental ethics.

Beyond the sense of freedom I have attempted to convey in relation to the 'wild' expansion of our vocabularies as a response to the ominous unfreedoms of our moral lag, horror of the unmanageable and 'fast' legislations of behaviours, what values arising from the reductionism of language are, therefore, commonly linked to, or associated with, the 'wild'? Numerous answers have been suggested from which I draw eclectically from two authors only, namely Holmes Rolston III and Laurie Prosser (but see also Hay, 2002 and *Environmental Ethics*, as well as this extended reference list). *Market* value as 'free' typically dominates and gives rise to metaphors like 'quarry' mentioned in Figure 1. For example, the Murray-Darling basin, producer of 40 percent of Australia's food is now 'collapsing' because of the drought. Its market risk to economics has suddenly and belatedly attracted the Federal Government's promise of $10 billion to ensure irrigation continues so as to shore up supply. Hence, the economically and socially contructed 'nature' as 'supermarket' metaphor. But another (largely anthropocentric) value of this food basin can be argued as *life support*. For without food, Australians might starve, and humans are one species of nature, or is it 'nature'? *Scientific* value highlights how genetically modified (GM) agricultural products are being pursued via research as replacements for those crops and livestock whose economic productivity is now deemed unsustainable due to salination, desertification and

drought. But this anthropocentric valuing of *science* and *market* for *life support* embodies contradictions. What implications and consequences of GM exist for the more ecocentric values of nature such as *genetic and biodiversity*, if indeed, there is ecocentrically-driven scientific and public anxiety about the rise of monocultures and their threats to *life support* value of more-than-the-human-species. Moreover, will the free market allow the consumer to freely choose the foods he/she ingests (Singer & Mason, 2006)? And how might we ecopolitically appreciate the value of scientific value (and, indeed, valuing of universities and their research and meaning-making in a propositional culture) if its evidenced-based consensus about human-induced climate change is unable to compete with a sceptical Prime Minister's call to pray for rain?

The above illustrates the potentially hierarchical valuing for nature as 'raw' and 'wild' or 'nature' as 'constructed' and 'tamed' or, even, technologically 'naturalized.' It illustrates for educators the importance of the ecocentric bipolar point in its continuum with anthropocentrism in reflexively testing and adjudicating the moral, social, political, environmental and ecological complexities surrounding the valuing of nature, even 'specieism' and our individual actions and interactions in relation to 'nature.' Thus, where the 'same' value might be ascribed to a jungle or the food we eat, be it *scientific* or *life support* or as intrinsic or organic, *that* valuation and its meaning is inexorably drawn into competition with itself, even internally incoherent, unless we deliberate about the anthropocentric or ecocentric assumptions, beliefs and 'positions' we knowingly and unknowingly subscribe to, or aspire to in morally (socially and politically) judging a range of 'ecological' issues. To paraphrase Singer and Mason (2006) eating, indeed, *is* a matter of ethics not only for how it enters anthropocentrically into questions about health, diet and the alleged 'obesity epidemic' but also, ecocentrically for the environmental injustices our 'choices' of what we 'freely' ingest contributes to many of the 'everyday social and environmental injustices some critically disposed educators have examined (Payne, 1997, 1999).

A third example about the values of nature and their complex and contradictory 'nature' is to consider what values might be applied to a National Park and privileged in the way we think, and practice, its value(s). These examples serve to not only highlight the challenge for the reconciliation of inner, social and outer nature, mind and body, global and local but pedagogically 'drill down' to the grounded realities of the mundane, ordinary, everyday primacy of practice and the question of individual and collective 'agency.' Again the purpose of such an example is to arrive at a more reflexive way of 'coming to grips' with the significance of the way in which the anthropocentric and ecocentric assumptions are played out on other values commonly associated with 'nature' and the wild and their taming. These values of nature include, amongst others, *recreational, character building, aesthetic, cultural symbolization, historical, character, therapeutic, spiritual,* and *intrinsic* but, importantly, do not exclude the values of *scientific, market, life support* and *biodiversity* mentioned 'nationally' in relation to the Murray-Darling basin example or, indeed, the 'embodied' example of eating ethically, raised by Singer & Mason (2006). To be sure, this latter set of values listed in relation to the value of National Parks also applies to the Murray-Darling basin, as all of these values can be examined in various different 'environments' for their relevance, coherence and contradiction. The main point is that whatever values we might attach to nature and 'nature,' the 'wild' and their various environments will ethically be somewhat conditional upon the ways in which we individually and collectively approach the valuing. This was outlined in the previous section on subjectivities, which in turn will partially be determined by where we 'sit' or 'fit' as human beings in Figure 1.

Prosser's 'preventive medicine' framing of values and 'open space' (another interpretation of 'wild' and focussed on locations or settings, and locales and their virtues) is different, even in its apparent anthropocentric posture. This anthropocentrically oriented valuing of the wild has strategically (and pragmatically for educators) been included here given the mental-health issues that schools are also encouraged to be actively involved with. A close inspection of Prosser's apparent anthropocentric 'preventive medicine' suggests how a wi(l)der range of open-space environments and their values/virtues call also for an open-mind/body conducive to the care, conservation and even preservation of the qualities and characteristics we associate with nature.

That is, there is a dissolving of the inner, social and outer natures/wildness whose categorical separation, philosophically and practically, reconstitutes the dualism of anthropocentrism and ecocentrism. Prosser's values of open spaces, some of which replicate Rolston III's, invite for the reader 'open' to the otherness of the wild/natural 'other' include: *security, hope, contemplation and mediation (mindfulness), inspiration, awareness, aesthetic appreciation, enjoyment, experiential satisfaction, vicarious satisfaction, self-awareness and self understanding, catharsis, delicious fatigue, calm peace tranquillity, respect/humility/wonder of larger than self, solitude, freedom, meaning and order, return to cradle, human relationships, growth towards a holism, visual refreshment, sensuous experience, social interaction.*

End-in-view

The priority question for critically-disposed educators about the *extent* of the education sector's complicity in the 'ecological crisis' nags. As does the broader question for policy makers and grass roots activists/ordinary citizens about fashioning a proportional response to the magnitude of the problem, for which the politics of certainty and scepticism about 'knowledge' and 'evidence' are now conspicuously on display. But, in this paper I have asserted that the reductionist politics of climate change are, in some ways, a bit of a red herring – a diversionary strategy that externalises and abstracts the status of the human condition to a Cartesian-like, polar crisis 'out there' somewhere where climate is 'named' and blamed. Instead, I have centred on the ecologically problematic human condition and, in the name of hope and cause for freedom, anticipated the expanded vocabulary, conceptual apparatus and intellectual resources demanded in education to engage a needed conversation that, thus far, has remarkably been silent. And marginalized the enclave of environmental education, its practices and the discourses of environmental philosophy and ethics.

Another way to think through the alleged ecological crisis and a more hopeful, less tamed educational response to the 'great challenge' presented by climate change is to examine the moral, social and political convergences and divergences of inner, social and outer 'natures.' The aim of this alternative is to deliberate about the 'reconciliation' of those three natures in relation to what might well be a 'crisis' in education (Arendt, 1956/1968). Much educational work for schooling (and pre/in-service teacher 'training' or professional development) focuses on epistemological problems (and methodologically in research) pertinent to the quest for the holy-grails of pedagogy and effective/efficient learning in disciplinary development, or heightened student thinking and engagement. Good. But this quest is more like the imagined pot of gold at the end of the elusive rainbow than the storm surge on the peak of rising sea levels.

Notwithstanding the exteriorised, abstracted and somewhat misleadingly reductionist portrayals of climate change, predictions of its consequences have served as a very sharp reminder of the non-sustainable socio-ontological way of unfree life we now live in the postmodern, virtual everyday. We have vast knowledge at our disposal. A massive amount of resources are devoted to its translation and transmission in schooling via the best epistemologies, pedagogies and methodological means for delivering, enacting, grasping or engaging with it.

Undoubtedly, non-(r)evolutions in education, schooling and teacher training (and their research/inquiry) are oriented to epistemological (and methodological) tinkering, often instrumentally for efficiency, rarely to respond to the almost intractable crises that ontologically are sourced in the neo-liberal quest for efficiency and productivity. Hence, learning, teaching, thinking, engaging, knowing, reflecting and assessing dominate in the discourse and real practices of schools and teacher training institutions. The mind is privileged, inordinately, as anticipated in the now reified commonsense about 'teaching' and 'learning' and the pedagogical transaction between teacher and learner, be it constructivist or behaviorist. But do these epistemological and pedagogical developments, assumptions or expectations connect with the more pressing quest for living (well)?

Throughout this paper, I have probed the relations (or non-relations) between epistemology and the new social-ontology of the ecologically problematic human condition. The connections and disconnections of epistemology, pedagogy and ontology cannot avoid their mediation by the limitations of language to represent or approximate human experience. One plausible 'solution' is to develop an expanded vocabulary for any (ecological) revolution in education. Climate change via solar sources might be part of nature's ontological contribution to the current problematic of the human condition; human-induced climate change via carbon dioxide saturation of the atmosphere from industrial and domestic emissions might be part of socially constructed 'nature's' (social-) ontology. Either 'ecological' way, we are confronted unavoidably with questions of our past, present and future *being, doing, dwelling, placing* and *becoming*. Equally, we are confronted with salvaging freedom and wildness. Very minor (r)evolutions in pedagogical, epistemological and methodological refinement may well be outstripping the socio-ecological-ontologies our current *be-ing* is risked by, via climate change, and our *be-coming* as the consequences of climate change are embodied individually and socially, and embedded culturally, globally and 'ecologically.'

As a minimalist (far less than proportional) 'precautionary principle' response to the magnitude of the 'horror of the unmanageable' it is timely, at the epistemological and pedagogical layers of a knowing, propositional culture, to incorporate concepts from environmental philosophy and their debates about values and morality, and its 'politics,' into the mainstream discourse of education. Vocabularies, paradigms, assumptions, subjective orientations to valuing, and valuing of 'nature' and the 'wild' offer an 'opening' for a far less ambiguous and more 'transparent' *othered* discussion about, ultimately, the purposes of education and schooling. Indeed, the great moral challenge beckons an education (R)evolution that concerns itself socio-ontologically with our individual and collective *becoming*. Undoubtedly, in the current climate of an ecologically problematic human condition, as it is rehearsed and reconstituted epistemologically in the current educational climate of silence, Arendt's declaration of a crisis in education, now passed, looms ominously.

Curricula and pedagogical solutions are available. They point to an education that is experiential and embodied, reclaims the primacy of practice and the restoration of agency. It would be developmentally sensitive, place(d) locally, socio-geographically responsible, bioregionally appropriate, globally aware. Its 'social-ecology' will require imagination. Ultimately, learners want to be actively engaged, hence experiential and situated/contextual pedagogies will need to be adopted. Agency, purpose, authenticity, judgement, problem-solving, risk-taking and action are some of the positive ingredients of a constructive and productive pedagogy in fostering positive relations with others, the 'wild,' nature and its various environments. Doomsday scenarios and 'crisis' discourses have a (limited but important) place in educational discourse. They are doomed to fail if developing a sense of 'free' agency (epistemologically and ontologically), action-competence, purpose and hope in young Australians is part of the intergenerational revolution needed in education and schooling (and parenting). Three decades of environmental education development must be invited in from the wilderness. That discourse, as nascent and contradictory as it is, offers much to educational policy-makers, teacher education institutions, curricula developers, researchers of pedagogy, schools, principals, reflective teachers, parents and community 'leaders'. The United Nations declaration of the Decade for Sustainability provides an overarching and supportive context for educators to respond to Stern's dire warnings.

There are few moral choices for sceptical but pragmatic governments. It is 'inevitable' that they will 'fast' legislate for the 'right' environmental behaviours through free market supply and demand 'costing/pricing' and sustaining of such initiatives. Both the critic and cynic will diagnose yet another chained unfreedom and taming of the wild in an allegedly democratic, enlightened and enlivened society. Such 'free' market governmentality is also a disavowal of the moral and political conversation that educated people and societies must undertake in choosing to be responsible, or take responsibility, for the legacies we construct now and leave for 'later.' The stakes are very high. For individuals, for social *and* environmental justice. And for future generations. The education sector, including the university sector, can choose to be part of a socio-ecological solution -- despite in Australia its current political devaluation and governmental undermining of the 'truths'

established by the knowledge producing and meaning-making capacities of the academy. Other solutions can be found in the no-longer--silent, vocabulary expanded conversations that are demanded in teacher education institutions and schools.

This article provides some of the sensitising conceptual apparatus and intellectual resources Bauman called for in developing a new 'compact' between intellectuals and the people. The conversation about reconciling 'inner', 'social' and 'outer' 'natures', even partially, can proceed if we are to freely avert his 'horror of the unmanageable.' To do otherwise, to not choose to take responsibility for our survival, makes the education sector and educators complicit in the demise or dilution of ecological freedom.

References

Abram, D. (1996) The spell of the sensuous: perception and language in a more-than-human world (New York, Vintage).

Adams, W. & Mulligan, M. (2003) Decolonizing nature (London, Earthscan).

Archer, M. (2000) Being human: the problem of agency (Cambridge, Cambridge University Press).

Arendt, H. (1956, 1968) Between past and future: eight exercises in political thought (Ringwood, Penguin).

Australian Bureau of Statistics (2004) Environmental attitudes and behaviour in Australian households (Canberra, Commonwealth Government of Australia).

Department of the Environment and Heritage, Australian Government (2006). Australia state of the environment (2006) (Canberra, Commonwealth of Australia).

Barbour, I. (Ed.) (1973) Western man and environmental ethics (Massachusetts, Addison-Wesley).

Bauman, Z. (1993) Postmodern ethics (Oxford, Blackwell).

Bauman, Z. (2006) Liquid fear (Cambridge, Polity Press).

Beck, U. (1995) Ecological politics in an age of risk (Cambridge, Polity Press).

Bentley, M., Fien, J. & Neil, C. (2004) Sustainable consumption: Young Australians as agents of change (Canberra, National Youth Affairs Research Scheme).

Blackstone, W. (Ed.) (1974) Philosophy & environmental crisis (Athens, University of Georgia Press).

Bookchin, M. (1982) The ecology of freedom (Palo Alto, Cheshire).

Bonnett, M. (2004) Retrieving nature: education for a post-humanist age (Oxford, Blackwell).

Bonyhardy, T. (2000) The colonial earth (Melbourne, Melbourne University Press).

Bowers, C. (1987) Elements of a post-liberal theory of education (New York, Teachers College Press).

Briggs, R. (2001) Wild thoughts: a deconstructive environmental ethics, Environmental Ethics, 23(2), 115-134.

Brown, L. (1987) Conservation & practical morality: challenges and educational reform (London, Macmillan Press).

Brotherhood of St Laurence/National Institute of Economic and Industry Research (2007) The impact of carbon prices on Victorian selected household types – a preliminary analysis, Available online at: http://www.bsl.org.au/main.asp (accessed 17 July 2007).

Carson, R. (1962) Silent Spring (Middlesex, Penguin).

Chawla, L. (1998) Significant life experiences revisited: a review of the research on sources of environmental sensitivity, Environmental Education Research, 4(4), 369-382.

Collard, A. with Contrucci, J. (1988) Rape of the wild (London, The Women's Press).

Cresswell, T. (2004) Place (Oxford, Blackwell).

Cronon, W. (1996) Uncommon ground: rethinking the human place in nature (New York, W.W. Norton).

Darier, E. (Ed.) (1999) Discourses of the environment (Oxford, Blackwell).

Diamond, J. (2005) Collapse: how societies choose to fail or survive (Camberwell, Penguin).

Dickens, P. (1992) Society and nature (Philadelphia, Temple University Press).

Dryzek, J. (1997) The politics of the earth (Oxford, Oxford University Press).
Drew, P. (1994) The coast dwellers (Melbourne, Penguin).
Elliott, A. & Lemert, C. (2006) The new individualism: the emotional costs of Globalization (London, Routledge).
Enzensburger, H. (1974) A critique of political ecology. New Left Review, 84, 3-31.
Fien, J. (1993) Education for the environment (Geelong, Deakin University Press).
Fien, J. (Ed.) (1993) Environmental education (Geelong, Deakin University Press).
Fien, J. (2000) 'Education for the environment: a critique' – an analysis, Environmental Education Research, 6(2), 179-192.
Flannery, T. (2005) The weather makers (Melbourne, Text).
Fleer, M. (2002) Curriculum compartmentalization?: A futures perspective on environmental education, Environmental Education Research, 8(2), 137-154.
Fox, W. (2006) A theory of General Ethics: human relationships, nature, and the built environment (Massachusetts, The MIT Press).
Garrard, G. (2004) Ecocriticism (London, Routledge).
Gatty, H. (1958) Nature is your guide (Sydney, Fontana Books).
Ginsborg, P. (2005) The politics of everyday life (London, Yale University Press).
Gough, S. (1999) Significant life experience (SLE) research: a view from somewhere, Environmental Education Research, 5(4), 353-363.
Griffin, S. (1978) Woman and nature (New York, Harper & Row).
Griffiths, J. (2004) A sideways look at time (New York, Tarcher/Penguin).
Griffiths, J. (2007) Wild: an elemental journey (London, Hamish Hamilton/Penguin).
Grille, R. (2005) Parenting for a peaceful world (Alexandria Longueville).
Grinter, I. (in process). An ecotheological revisioning of VCE Studies of Religion and Society. PhD thesis, Monash University.
Hargrove, E. (1989) Foundations of environmental ethics (New Jersey, Prentice-Hall).
Hargrove, E. (1998) After 20 years, Environmental Ethics, 20(4), 339-340.
Harvey, D. (1996) Justice, nature & the geography of difference (Oxford, Blackwell).
Hart, P. & Nolan, K. (1999) A critical analysis of research in environmental education, Studies in Science Education, 34, 1-69.
Hay, P. (2002) Main currents in western environmental thought (Sydney, UNSW Press).
Heller, C. (1999) Ecology of everyday life. (Montreal, Black Rose Books).
Hitzhusen, G. 92007). Judeo-Christian theology and the environment; moving beyond scepticism to new sources for environmental education in the United States, Environmental Education Research, 13(1), 55-74.
James, P. (2006). Globalism, nationalism, tribalism (London, Sage).
Jickling, B. (Ed.) (1996) A colloquium on environment, ethics, and education. (Whitehorse, Yukon College).
Jickling, B. & Spork, H. (1998) Education for the environment – a critique, Environmental Education Research, 4(3), 309-327.
Kenway, J. & Bullen, E. (2002) Consuming children: education-entertainment-advertising (Buckingham, Open University Press).
Lakoff, G. & Johnson, M. (1999) Philosophy in the flesh (New York, Basic Books).
Leach, J. (1929) Australian nature studies (Melbourne, Macmillan and Co.).
Leopold, A. (1966) A sand county almanac: with essays on conversation from Round River (New York, Ballantine Book).
Low, T. (2003) The new nature (Camberwell, Penguin).
McKibben, B. (1990) The end of nature (London, Viking Press).
Melucci, A. (1996) The playing self: person and meaning in the planetary society (Cambridge, Cambridge University Press).
Merchant, C. (1980) The death of nature: women, ecology and the scientific revolution (New York, Harper & Rowe).

Miles, R., Harrison, L., & Cutter-Mackenzie, A. (2006) Teacher education: a diluted environmental education experience, Australian Journal of Environmental Education, 22(1), 49-60.
Nash, R. (1980) Wilderness and the american mind (Yale, Yale University Press).
Nash, R. (1990) The rights of nature: a history of environmental ethics (Leichardt, Primavera).
Nielsen, R. (2005) The little green handbook (Melbourne, Scribe).
Murdoch, J. (2006) Post-structuralist geography (London, Sage).
O'Loughlin, M. (1998) Paying attention to bodies in education: theoretical sources and practical suggestions, Educational Philosophy and Theory, 29(1), 275-291.
Olsen, A. (2002) Body and earth (New Hampshire, Middlebury College Press).
Orr, D. (1992) Ecological literacy (Albany, SUNY Press).
Palmer, J. (1998) Environmental education in the 21st century (London, Routledge).
Parsons, H. (1977) Marx and Engels on ecology (London, Greenwood).
Passmore, J. (1974) Man's responsibility for nature (London, Duckworth).
Payne, P. (1997) Embodiment and environmental education, Environmental Education Research, 3(2), 133-153.
Payne, P. (1999) Postmodern challenges and modern horizons: education 'for being for the environment,' Environmental Education Research, 5(1), 5-34.
Payne, P. (2003) The technics of environmental education, Environmental Education Research, 9(4), 525-541.
Payne, P. (2005a) Families, homes and environmental education, Australian Journal of Environmental Education, 21, 81-96.
Payne, P. (2005b) Lifeworld and textualism: reassembling the researcher/ed and 'others,' Environmental Education Research, 11 (4), 413-431.
Payne, P. (in press, 2008) Postmodern oikos, in M. McKenzie, H. Bai, P. Hart, & B. Jickling (Eds.) Fields of green: restorying education (Hampton Press).
Pepper, D. (1993) Eco-socialism (London, Routledge).
Prosser, L. (1980). Man, open space and preventive medicine, Australian Journal of Health, Physical Education and Recreation, 88,
Reid, A. & Scott, W. (2006) Researching education and the environment: retrospect and prospect, Environmental Education Research, 12(3-4), 571-587.
Rickinson, M. (2001) learners and learning in environmental education: a critical review of the evidence, Environmental Education Research, 7(3), 207-320.
Robottom, I. (Ed.) (1987) Environmental education: practice and possibility (Deakin University, Geelong).
Robottom, I. & Hart, P. (1993) Research in environmental education (Geelong, Deakin University Press).
Rolston III, H. (1988) Environmental ethics: duties and values in the natural world (Philadelphia, Temple University Press).
Singer, P. & Mason, J. (2006) The ethics of what we eat (Melbourne, Text Publishing).
Soper, K. (1995) What is nature? (Oxford, Blackwell).
Soule, M. & Lease, G. (Eds.) (1995) Reinventing nature: responses to postmodern deconstruction (Washington, Island Press).
Stern, N. (2006) Stern review; the economics of climate change. Executive Summary.
Snyder, G. (1999) The Gary Snyder reader: prose, poetry, and translations (New York, Counterpoint).
Stables, A. (2001) Language and meaning in environmental education: an overview, Environmental Education Research, 7(2), 121-128.
Thoreau, H, D. (1962) Walden (New York, Time Inc.).
Turner, F. (1991) Rebirth of value (Albany, SUNY Press,.
Udall, S. (1963) The quiet crisis (New York, Avon Books).
Vogel, S. (1996) Against nature (Albany, SUNY Press).
Watson, R. & Watson, P. (1969) Man and nature (New York, Harcourt Brace).

Weiss, G. & Haber, H. F. (Eds.) (1999) Perspectives on embodiment: the intersections of nature and culture (New York, Routledge).

---

[i] Differentiated from 'nature' that will be used throughout this text to depict the socially-constructed 'nature' of Nature.

[ii] The average global temperature has already risen 0.74 degrees C. above pre-industrial levels and, even with *no* more greenhouse emissions from human activity, will rise to 1.4 degrees due to climate-change 'lag'. A 2-3 degree rise will create a 20% 'shut down' chance of the oceanic currents regulating the planet's temperature. A rise of 3 degrees is outside human experience. At just under a 3 degree rise, there is a 99% probability that Greenland will have 'melted' and global sea level rises of 5-7 metres will result.

[iii] Although the inextricable link between social and environmental justice cannot be pursued here, it is central to many of the positions taken by various authors referenced here under the generic concept of 'social ecology'. Bookchin (1982), for example, asserts that the man over nature and male over female values-hierarchical/dualistic thinking (and practices) are major dimensions of the same logics and practices. Hence, androcentrism, in Figure 1. The evidence base about climate change in Australia shows that wealthy and well-educated Australians contribute twice as much to climate change as average households. The carbon footprint of rich tertiary educated households was 57.8 tonnes of greenhouse emissions annually, trade household families was 37.9 tonnes, age pensioners was 24.9 tonnes and poor families was 22.3 tonnes. The national average was 32.2 tonnes. Projections show that a $25/tonne carbon tax would cost poor families $558 extra and the wealthiest families $1446. As a proportion of income, poor families (2.3% of income) will pay almost seven times more than the rich (0.4% of income) (Brotherhood of St Laurence; National Institute of Economic and Industry Research, 2007).

[iv] There has been vigorous debate about the concept of sustainability (and its practices) in environmental education, including a special edition of *Environmental Education Research* devoted to the language of sustainability (Stables, 2001).

[v] Copious intellectual resources exist that underpin this frustration. Rachel Carson's (1962) *Silent Spring* chillingly described the toxification of the environment. Perhaps a forerunner to Al Gore's *Inconvenient Truth,* the politically prescient Secretary of the Interior in the US government Stewart Udall's (1964) *The Quiet Crisis* outlined the eco-political challenges of the time, of which numerous environmental problems persist caustically. And, still predating the current fear of climate change and its reductionism, numerous scholarly publications have dealt forcefully with our 'responsibility for' and 'obligations to' nature (Blackstone, 1974, Passmore, 1974), nature's 'death' and women in science (Merchant, 1980), 'rape' (Collard, 1978), 'end' (McKibben, 1989), 'colonization' (Adams & Mulligan,) and 'injustice' (Harvey, 1996). Others have examined nature and 'woman' (Griffin, 1978), 'man" (Watson & Watson, 1968) and 'society' (Dickens, 1992), its 'rights' (Nash, 1990) and its 'discourses' (Darier, 1995, Dryzek, 1997). Some have asked 'what is' nature (Soper, 1995) while others have discussed its 'rebirth of value' (Turner, 1991), 'reinvention' (Soule and Lease, 1995), 'desire' (Heller, 1999) and 're-enchantment' as well critical forays into what is 'against' it (Vogel, 1996) or, most lately, a 'new' nature in our cities (Low, 2003). Others have considered the place of art (Bonyhardy, 2000), the role of dance and movement (Olsen, 2002), families (Payne, 2005a,b) and practical parenting (Grille, 2005).

[vi] Ironically, since the State Government of Victoria in Australia first introduced in 2004 its nationally acclaimed five-star green standards for cutting energy use and greenhouse emissions in new homes, average emissions of those dwellings are nearly 6 per cent higher than the average for existing homes. Regulatory approaches to 'forcing' the right environmental behaviours must also contend with the near 38,000 kilometres travelled by the 'normal' Australian evening meal and, for example, the 2400 litres of 'waterprint' used in the production-ingestion 'pathway' of one hamburger, 8000 litres for a pair of leather shoes and 140 litres for a 125ml cup of coffee (see also Payne, 1997). As Singer & Mason (2004) introduce in their 'ethics of what we eat', we don't usually think of what we eat as a matter of ethics and, to make the point '…try to think of a politician whose prospects have been damaged by revelations about what he or she eats.'

[vii] Notably, and on a reasonably positive note as opposed to the 'doomsday'/'deficit –model' prophecies, the 'significant life experience' literature in environmental education research identified how learners' commitments and attitudes to the environment may be enhanced by their being exposed to natural areas, role of family, input from organizations, raising animals and plants, negative experiences of habitat destruction and pollution, the importance of education and influential teachers, concerned friends, sense of social justice, the influence of a book or author, concerns for the next generation and the place of principles or religion (Chawla, 1998). That line of inquiry and research has been debated and partially clarified (for example, Gough, 1999).

[viii] The terms/vocabulary used in Figure 1 are 'poor' discursive representations of different characterizations and constructions of the ways in which we might philosophically and, at least potentially, approach questions in education about the 'practical' relations of culture and nature and humans and their (numerous) environments ((Abram, 1996; Lakoff & Johnson, 1999).

[ix] Or, in different terms, ecologies such as 'mental' or 'performative, spatial imaginaries'; 'social' and; 'machinic' or heteregenous relations of non-humans incorporation into the geographical collective (Murdoch, 2006).
[x]For some reason, environmental education is a 'touchy' or 'political' subject. Even within environmental education, there has been robust debate about the metaphor of 'education *for* the environment' (Jickling & Spork, 1998, Fien, 2000) as distinct from education *about (*often as an applied science) or *in* the environment (often as a practical, immersive experience in, often, applied science/interpretive contexts). Yet, there appears to be no problem in education with educating *for* business, or accounting, or *for* the computer.