

Ontology and the Critical Discourse of Environmental Education

Phillip Payne

School of Education
La Trobe University
Victoria

Introduction

There has been a major effort in Australian academic circles over the past fifteen years to develop a critical discourse in environmental education curriculum, pedagogy, history, and research (Henry *et al* 1981, Di Chiro 1987, Gough 1987, 1994, Robottom 1987, Greenall 1987, Fien 1993 a,b, Greenall Gough 1993, Robottom & Hart 1993). This discourse is critical of 'mainstream' approaches to environmental education that are alleged to be positivist, behaviourist, masculinist, and instrumentalist. Internationally, environmental educators have also considered various shortcomings of environmental education. There is general concern about unrealised aspirations, unrealistic expectations, definitional problems, values issues, conceptual obfuscation and questionable research endeavours (Brennan 1979, Disinger 1979, 1985, Williams 1979, Baer 1980, 1981, 1985, Knapp 1983, Roth 1988, Iozzi 1989 a,b, Gigliotti 1990, Marcinkowski 1990, Wals, Beringer & Stapp 1990, Ham & Sewing 1992, Leming 1992, Pinar & Bowers 1992, Ramsey, Hungerford & Volk 1992). Consequently, it can be asserted there are practical deficiencies of a moral, social, political, and ecological nature. If so, one conclusion about the development of the field of environmental education is that it is problematic and often contradictory.

The same can be said about my own endeavours to develop and implement an undergraduate degree program in environmental education. Because of the value laden nature of environmental education my attempts culminated some years later with, what I believe, is a fundamental question for conceptualising a curriculum praxis. Once certain educational aims are identified, such as developing an 'environmental ethic', *how* do educators theorise curriculum while paying explicit attention to a) the range of dispositions, life experiences, interests, and commitments of contributing staff *and* participating students as influenced by a variety of historical, social, and material circumstances and b) in the light of such differences how the enacted curriculum is then 'lived' in relation to the realisation of pre-determined aims? (Payne 1993). Clearly, the question I continue to pose is consistent with Ian Robottom's (1994) recent editorial in this journal where he called for professional environmental educators to theorise their own practices and professional contexts. Robottom, therefore, provides an appropriate cue for my inquiries, as does his

invitation that philosophical research should continue to make significant contributions to the field.

Part of the 'solution' to my own questioning is consistent with recent developments in critical curriculum theorising that have independently explored the relevance of Anthony Giddens' social theory (Kemmis with Fitzclarence 1986, Shilling 1992, and Fien 1993a) and Brian Fay's metatheory of critical social science (Fien 1993b). With specific regard to environmental education, John Fien (1993a) suggests Giddens' 'theory of structuration' satisfies the criteria for a social action theory.¹ According to Fien (p. 95) the challenge for critical environmental educators is to 'ground' their curriculum theorising in the practice of a critical pedagogy. I intend to reveal how Giddens (1979, 1984, 1987, 1990, 1991, 1994) can be used to explain the grounds, or 'ontology' of individual and social practices and, in doing so, enable individuals to 'make a difference'—a key theme of Giddens' social theory.² Giddens' 'duality of structure and agency' is crucially significant in my attempts to explain the curriculum applications of a 'culturally grounded ontology'. Methodologically, his duality helps explain how human actions both create and draw from the social structures in which they live. Thus, Giddens believes agents are not a socially and mechanistically determined 'cog in the machine', nor do they voluntarily create their own world. Rather, Giddens' 'middle ground' explains the dynamic interplay of objective and subjective forces influencing human actions and social interactions. This dynamic notion of the constraining and enabling features of human action and social life is what, according to Giddens, reconstitutes society, including environmental problems.³ Giddens' duality signals a shift in emphasis in social inquiry from epistemological concerns to ontological propositions about human behaviours. These propositions are central to my formulation of a critical curriculum praxis. Elsewhere, Fien (1993b) introduces Brian Fay's 'basic scheme' of critical social science to outline a broad thematic framework for a critical curriculum theory for education for sustainability. My aim is to formulate a conceptual framework for environmental education in a manner that is consistent with Fay's (1975, 1987) theorising which, among other things, has the notable objective of being practical and non-idealistic. The objective of Fay's (1987) amendments to the basic scheme is to 'temper' the utopian idealism of much critical social science. Hence, Fay's thesis of a 'limits to rationality and change' is an important accompaniment to Giddens' praxis orientation. In total I detail how Giddens' and Fay's social theorising can mutually advance the critical discourse and praxis of environmental education. I develop a sketch of a critical theory of environmental education. I will refer to this theory as a critical ecological ontology for educational inquiry (Payne, 1993). The sketch includes a series of nine sensitising questions for practical purposes. The questions

are loosely derived from a conceptual framework and matrix statements, or probes, that are presented in Tables 1 and 2. This critical ecological ontology aims to 'sensitise' (Giddens 1984, p. 281) environmental educators to the *possibility* of reviewing existing curriculum and pedagogical practices, provoke and contribute to the critical discourse, and/or (re)evaluate current research endeavours. The sketch identifies the broad parameters for curriculum inquiry and action in environmental education. I anticipate it will be useful to environmental educators in a variable and selective manner irrespective of year level taught or background in the applied sciences, social sciences, humanities or arts.⁴ A prescriptive curriculum for environmental education will not be developed here. This is strategic. It is consistent with a critical aim of foregrounding for inquiry, interpretation, explanation and assessment those contexts of learners' lives and actions that can be scrutinised individually and collectively for their environmental antecedents and consequences. This, it seems to me, is the grist of a radical, inclusive, and democratic praxis in environmental education.

Ontology as a key idea for a curriculum praxis

Before developing how Giddens and Fay mutually inform a version of critical praxis in environmental education some elaboration of the term 'ontology' is required. It is rarely explained in contextually appropriate ways. The practical orientation signalled by Giddens and Fay is reflected in the truism that we tend to be 'creatures of habit'. It acknowledges that 'patterns of being' such as dietary routines and their related forms of social association have 'distant' intended and unintended consequences such as environmental despoliation. This connection of individual and collective actions and interactions with social, political, and cultural consequences is what Giddens' 'duality of structure and agency' explains.

An example should prove useful at this stage.⁵ With regard to *agency*, 'fast food' has increasingly become a conventional form of individual and collective meal making and meal taking. With regard to *structure*, the rise of this contemporary ethos is a consequence of various social relations such as changing family roles and work demands, political arrangements such as the commercialisation of lifestyle, and cultural conditions such as the internationalisation of cuisine. The reader might consider the controversies (for the duality of agency and structure) surrounding the emerging 'food ethos'. Problems and issues include the nutritional and dietary effects of 'take-away' or 'eat-in' hamburgers and tacos, corporate sponsorship of schools and local under age sport, purchase of sites for restaurants in suburban areas, land and farming practices at national and international levels. Culturally, fast foods involve the ingestion of certain pesticides and hence, the residue of an 'invisible' high technology manufacturing industry and its supporting transport and

retail infrastructures. Eating a hamburger is conventional but the experience is problematic when the agent's dietary routines and actions, along with others over time, place and space, are examined for their environmental antecedents and consequences within the relative constants of a particular type of industrial social structure. For example, agents are 'mobilised' knowingly and unknowingly to accessible and attractive restaurant sites, such as corner location on a busy road, and then 'passed' through the site in a particular spatial, temporal, and symbolic configuration. The bodily consequences of repeated ingestions of the industrial hamburger is 'risky' while the cultural and ecological implications can be seen as the 'poisoning of the whole human environment' (Carson 1962). Thus, what can be examined educationally in establishing an 'ecological' or 'socio-ecological' ethic about dietary patterns is the connection, or lack of, between conserving/preserving the embodied agent/self (inner nature) and the trans-geographical environment (outer nature). If not already obvious this globally particularistic notion of a practical ontology, as materially, temporally, spatially, and symbolically configured, invites close scrutiny of various embodied moral, social, and political dimensions of ecological problems and issues. Thus, revealing a person's 'situatedness' in a practical ontology is consistent with a critical praxis where the environmental antecedents and consequences of dietary patterns of individual action and cultural interactions can, perhaps, be modified.⁶

The adage 'actions speak louder than words' is another useful way of characterising Giddens' focus on everyday behaviours and routines in social theory and inquiry. 'Acting locally', that is as ontologically situated, assumes greater significance when environmental problems and issues are connected strongly to the consequences of our individual and collective eating of fast food, as well as leaving on lights, heaters, taps. There can be no doubting the 'ecological crisis' (a term I am loathe to use because its tendency is to shift the locus of responsibility for environmental despoliation to 'problems' and 'issues' that circulate 'out there', somewhere) is individually embodied and socially embedded in the integrating *conditions* of one's mundane, everyday life—the 'experiential fodder' of a critical pedagogy. Excavating and educatively exploring those conditions of individual and social experience is one way of unearthing the persistent roots of ecological problems. Thus, a practical ontology revalues the body. It portrays bodily habits, actions and interactions as the mode of praxis contributing to environmental problems and their possible resolution. The 'intelligent' body proposed here must be understood as a culturally 'etched' site for curriculum inquiry. Thus, the twist to ontologically based explanations entails a different emphasis in curriculum theory and inquiry. What demands understanding are the environmental antecedents and consequences of everyday individually

embodied and collectively embedded 'culturally lived' experiences such as eating a hamburger, cleaning teeth, disposing of waste and so on.

In summary, a practical ontology for developing a curriculum praxis locates its meanings in the locally situated, corporeally embodied, and culturally etched actions, interactions, arrangements, and other embedded and organising routines of individual and collective life. Furthermore, placing ontological considerations at the forefront of curriculum inquiry has the propensity to deal more robustly with dualistic and values-hierarchical thinking.⁷ Dualistic thinking has been a constant source of irritation to environmental ethicists of a critical persuasion (Bookchin 1990, Warren 1990), while in the philosophy of education Dewey's (1938) non-dualism has been a source of inspiration to many educators. In environmental education, for example, the case for including ontological considerations that reciprocally connect culturally embodied and embedded *agency* and socio-political *techno-structures* is heightened by the commentary of some of its practitioners (Roth 1988, Iozzi 1989 a,b; Gigliotti 1990, Wals, Beringer & Stapp 1990). There is a loose consensus that many learners do not understand, or are not prepared to make the sacrifices necessary for 'environmentally responsible' behaviours, or do not understand the consequences of their actions for the environment. Extrapolating these views suggests the syndrome of the ecological 'crisis' existing 'out there somewhere' persists in environmental education discourses and many of its 'contrived' practices. Astute teachers and students only have to 'find it', or be made aware of it, investigate the problem thus 'fixing it' and 'saving the environment'.⁸ To what extent these approaches promote individual and collective responsibility and accountability is, however, questionable.

Some preliminary theoretical considerations

What needs to be developed is how Giddens' explanatory propositions can be elaborated in a curriculum praxis if Fien's theorising were also to satisfy Fay's (1987, p. 26) objectives that critical social science must simultaneously be 'scientific, critical, practical, and non-idealistic'. Fay's inclusion of the last objective in a 'properly critical science' is a direct consequence of appraising the ontological presuppositions of the 'basic' utopian/emancipatory scheme of critical social science of which he is critical. Fay's critique of the basic scheme's ontological presuppositions is metatheoretically significant because it acknowledges both rationality and liberation have their limits. Hence, the idea of a critical praxis requires qualification.

Fay (1987, p. 46) maintains the basic scheme's theories of false consciousness, crisis, education, and transformative action paint a 'one-sided' picture of human and social estrangement and emancipation (Table 1). According to Fay the one-sidedness predetermines a 'fully activist'

conception of being human; people are assumed to be 'intelligent, curious, reflective, and wilful'. In turn, the basic metatheoretical scheme then proposes an epistemologically driven version of liberation. This scheme values rational self-clarity and collective autonomy and proceeds epistemologically through an enlightenment process which fosters empowerment and culminates in emancipation.

Fay's metatheoretical intention is to uncover this 'given' relation between theory (ontological presuppositions and commitments) and metatheory (theories making up a metatheory of critical social science). He concludes the basic scheme is neither coherent nor compelling (1987, p. 165). Fay's amended metatheoretical scheme invokes ontologically limiting factors such as embodiment, embeddedness, opacity, and historicity which, with Giddens help, highlight for critical curriculum theorising the significance of our social embodiment and cultural embeddedness. Therefore, Fay's (p. 213) amended metatheoretical scheme incorporates theories of the body, tradition, force, and reflexivity which together 'temper' and limit the praxis aspirations and expectations of the basic scheme (See Table 1).

Giddens' contribution to understanding utopian idealisms should not be lost from this preliminary metatheoretical clarification. In fact, Giddens' (1994) version of 'utopian realism' is grounded in 'observable trends'. Giddens (1991, 1994) has discussed the 'limiting' factors of embeddedness, embodiment, and opacity in a manner different to what Fay does. Giddens' 'stratification model' is useful. Here, Giddens (1984, p. 5) distinguishes between discursive consciousness, practical consciousness, and the unconscious. These layers of consciousness differentially underpin the rationalisation of action, the reflexive monitoring of action, and the motivation of action. Giddens' interest in social explanation focusses primarily on practical consciousness, an ontological characteristic which lies 'below', 'hidden', or 'outside' language, but which is not barred from verbal and written (discursive) expression. Put another way, we can't talk about everything we experience; with prompting we can explain more. In real terms the practical consciousness is that mode of being which 'subconsciously' allows us 'to get along each day'. This sub verbal conscious includes habits, mannerisms, dispositions, social graces and a whole range of intuited and tacit behaviours which provide the codes and resources through which individuals and groups order conventional actions, interactions, routines, and other forms of social association. For Giddens the practical consciousness and its contribution to the 'reconstitution of society' is a priority concern for social inquiry and explanation. Another example should help. The revelation I experienced after my father told me to turn the tap off while brushing my teeth (during a drought period in my youth) illustrates crudely the environmental antecedents and

consequences of Giddens' interest in the 'holds' of habits, understood as the practical consciousness seen within an interpretation of a duality of structure and agency.

Sketching a curriculum for critical socio-environmental praxis⁹

The Giddens and Fay inspired version of environmental education is now offered in the form of a series of questions posed to environmental educators. The questions are followed by two tables that summarise the detailed conceptual analysis of Fay and Giddens work from which the questions have been derived. The questions could be written in a variety of ways depending on how the statements and probes I conclude with in the third column of Table 2 are interpreted and where different emphases with learners might be placed. A critical ecological ontology for inquiry by teachers, students, scholars and researchers would selectively seek to respond as fully as possible, where appropriate according to current circumstances, to the following probes. Cursory explanations are offered for illustrative purposes only.

1. In what ways are environmental problems in the human body?

People just don't think there is an ecological crisis. It is lived daily. For example, the application of suntanning lotion protects the body from overexposure to the sun and the alleged breakdown of inbuilt natural protections in the atmosphere. The use of lotion is a major personal and social statement about environmental embodiment and relationships. Generally, how the body in its physiological maintenance, dispositions, and actions in diet, work, leisure, and maintenance responds to its variable intakes and outputs provides for numerous curriculum opportunities. Alternatively, how does working at a computer permit or deny environmental understanding, appreciation, and action? What is in chewing gum or drinking water that is individually and socially environmentally problematic?

2. What pathways into and out of the body do environmental problems and issues take?

A pathway is the route, or routes, through which the world 'out there' including toothpaste, computers, irradiated apples, hamburgers, newspapers, televisions, heavy rock, mountain-biking, waste disposal, sewerage systems, etc.; enter into and are expressed outwardly by individuals and groups who embody temporarily or permanently various aspects of an environmental problem. Establishing what pathways exist provides the curriculum grounds for examining how they are supported or denied, as posed in the next question, as well as how they are produced and reproduced over time, space, and symbol.

3. *What are the habits and routines of daily life at home, school, classroom, neighbourhood, and work and play sites that allows or denies the environmental problem to remain in the body of each student?*

An individual does not just exist at home or in school. An individual leads 'multiple' lives where different social situations permit or deny entry and exit of environmental problems and issues into the body. The curriculum purpose here is to establish an understanding of the multiple situations and temporal, spatial, and symbolic contexts in which an individual acts and interacts in reconstituting society. Continuities and discontinuities between those multiple contexts of action can be examined.

4. *How do the conventions, social interactions and social expectations, vocabulary and use of language, social images and other signs, and other accepted community traditions, norms, values, and arrangements contribute to those habits and routines permitting or denying the environmental problem in student's bodies?*

Any of the questions in the preceding examples could be answered from a disciplined, subject basis or from an interdisciplinary problem-solving perspective. Chemistry students could tally ingredients identified on food labels as they eat food in different circumstances. English students could examine the use of language in consumer images and representations as they are exposed to them in different situations—television advertisements, billboards, magazines, music etc. Kindergarten children can compare play sites for natural qualities, consider what the meaning of a play object is, or discuss what happens to the environment when so many bombs explode near the TV Road-runner.

5. *How do the above habits and routines vary among individuals when there are different environmental problems entering and exiting respective bodies?*

To respond to this question shifts the focus of curriculum to discussion, questioning, and mutual understanding. The issues raised in each and all of the previous questions and examples is the substantive matter of the curriculum. Understanding that environmental problems are individually and collectively embodied is not a case of monologically writing about it only for written expression, grammar, recording of an experiment, or calculating numerical differences. Meaning making for embodied individuals and differences between them is a dialogic undertaking (Haug 1987) that has curriculum currency in the development of orality and social skills.

6. *What influence on the pathways of the problems do historical, geographical, social, political, technological, material, and symbolic conditions have?*

This question is not necessarily more applicable to older students. Grade three children can experience and understand the different ways water is received and disposed of and make appropriate judgements about it. They can ask teachers about why there is, or isn't, trees in a school yard. Older students can, of course, inquire into the pathways of Levi jeans. For example, Wrigley's chewing gum is historically part of a massive transnational undertaking of forestry and land usage in Indonesia, Malaysia, and the Amazon basin. Wrigley's gum supports a chemical, packaging, and transportation industry whose environmental consequences, including sticking gum under desks, can be incorporated into interdisciplinary inquiry in environmental education.

7. *What routines of daily life and their components might be changed so that the problems entering and exiting the body will be reduced?*

Considerations for curriculum emerge from the tact taken in the previous questions. For very young children study of the frequency gum is stuck under a desk in classrooms or under seats at the movies provides grounds for considering the accumulated consequences of such practices. The 'cultural' logic of appropriate disposal of gum and other common pathways out of the body can be assessed. School rules about gum can be considered. Moral issues can be touched on in the curriculum about the practice of gum disposal.

8. *What are the consequences for self, others, and the environment, and for the pathways of environmental problems if the routines of individuals, the group, and the community are changed knowingly?*

Young children can relate to stepping on others gum. Older students can consider how clear felling in the Amazon basin has effects on the atmosphere, land usage patterns in Brazil, and population and housing issues surrounding the shifting demographics of Amazonian communities. Any of these matters can be related to the specific subject matter of Mathematics, for example, or can be treated from an interdisciplinary perspective.

9. *What is the justification for a knowledgeable response to each of the above questions, and how would that justification be then explained to those involved in environmental education as well as the various people and environments influenced by it?*

The question asks that whatever examples and solutions be arrived at by teachers and students are defensible to others involved in curriculum practices as well as those influenced by any consequences of the

curriculum actions. Deliberated individual, collective, social, political, and ecological change is a requirement of a legitimate and credible approach to environmental education curriculum enactment as well as inquiry and critique into it.

The framework of a critical ecological ontology for educational inquiry

The conceptual fit of Giddens and Fay is broadly summarised in Table 1. Clearly the ideas are interrelated.

Table 1
A Matrix of Giddens' and Fay's Major Concepts

GIDDENS' (1984, 1990, 1991, 1994)			FAY (1987)	
CONCEPT	PRINCIPLE/ DIMENSION	THEORY/ PROPOSITION	META- THEORY CRITERIA	REGULATIVE & NORMATIVE VALUES
-Sequestration of experience -Commonsense	Existential anxiety -disembedding mechanisms -reflexive modernity	Manufactured uncertainty, Risk society	<i>False Consciousness</i>	Self-estrangement
-Multilayered democratic participation -Post-scarcity system -Demilitarisation -Humanisation of technology	-Growth of totalitarian power -Collapse of economic growth mechanisms -Nuclear warfare of large-scale war -Ecological decay/disaster	Self Risk Society	<i>Crisis</i>	Humanist or social self-estrangement, activism
-New knowledge -Politicisation of local/global	Ontological security Social movements	Action Social Change	<i>Education</i>	Rational self-clarity, collective autonomy, enlightenment
-Free speech/democratic movements -Labor movements -Peace movements -Ecological movements	-Social integration -Social movements -Generative politics	Life politics, Emancipatory politics, Action, Social change	<i>Transformative Action</i>	Dyadic power, empowerment, emancipation, freedom as happiness
-Unconsciousness/practical consciousness -Mutual knowledge	Ontological security	Action Self	<i>Body</i>	Embodiment, Opacity
-Practical consciousness/unconsciousness -Mutual knowledge -Contextualisation -Societal totalities -Allocative Resources	Ontological security	Self Time-space	<i>Tradition</i>	Embeddedness, historicity
-Recursivity -Structure(s) -Authoritative resources -Dialectic of control	Existential anxiety -time space distanciation	Action Society	<i>Force</i>	Monadic power, historicity/embeddedness
-Recursivity -Diachrony -Structure(s)	Existential anxiety -disembedding mechanisms	Self Society and social change Double hermeneutic	<i>Reflexivity</i>	Contingent/ecological opacity, rational disagreement and contradiction, limits.

With regard to specifying the relation of Fay's metatheorising to the critical discourse of environmental education Fien has outlined many of the key ideas of the basic scheme. I revise and supplement these ideas in Table 2 according to Fay's amended scheme and Giddens' theorising.

Table 2
A Conceptual Matrix for Critical Environmental Education

FAY (1987) THEORY AND SUB-THEORIES	FIEN (1993) CRITICAL THEORY FOR EDUCATION FOR SUSTAINABILITY	PAYNE A CRITICAL ONTOLOGY FOR EDUCATIONAL INQUIRY
<p>1. A theory of false consciousness which (i) demonstrates the ways in which the self understandings of a group of people are false (in the sense of failing to account for the life experiences of the members of the group), or incoherent (because internally contradictory), or both-<i>Ideology-critique</i>. (ii) explains how the members of this group came to have these self-misunderstandings, and how they are maintained; (iii) contrasts them with an alternative self-understanding, showing how this alternative is superior.</p>	<p>Demonstrates (i) the ways in which the social and self understanding of a society fails to account for root causes of environmental problems or provide for the social and environmental needs and interests of all its members (the skill of ideology critique). Explains (ii) how the members of a society came to have these misunderstandings and how they are maintained through the process of 'hegemony'; and provides (iii) a vision of an alternative world view and a new set of social and self-understandings.</p>	<p>Accepts interpretively and engages reflexively (i) the fallibility of mutual knowledge and commonsense, and hence problematises reification. Scrutinises (ii) the conventions, or rules and resources, of mundane actions, social interactions and relations which learners act through, draw upon and reconstitute knowingly and unknowingly; and reveals (iii) how learners are capable, can theorise self as a mode of praxis with environmental antecedents and consequences, and are engaged in constructing a narrative concept of selfhood.</p>
<p>2. A theory of crisis which (iv) spells out what a social crisis is; (v) indicates how a particular society is in such a crisis. This would require examination of the felt dissatisfactions of a group of people and showing both that they threaten social cohesion and that they can not be alleviated given the basic organisation of the society and the self-understandings of its members; (vi) provides a historical account of the development of this crisis partly in terms of the false consciousness of the members of the group and partly in terms of the structural bases of the society.</p>	<p>Understanding (i) the scope of the environmental crisis; (ii) the root causes of the environmental crisis and how they cannot be alleviated effectively given the basic organisational structures of our society; and (iii) the historical development of the environmental crisis in terms of the structural bases of society and of individual and group false consciousness.</p>	<p>Acknowledges (i) historically lived individual, social, and environmental experience is increasingly fragmented and mediated externally, primarily through global intellectual expertise and technological means</p>
<p>3. A theory of education which (vii) offers an account of the conditions necessary and sufficient for the sort of enlightenment envisioned by the theory; (viii) shows that given the current social situation these conditions are satisfied.</p>	<p>Offers (i) an account of the forms of environmental education necessary for the sort of enlightenment envisioned by the theory; and shows (ii) how the pedagogical practices in these forms of environmental education can be implemented.</p>	<p>Problematises with new knowledge (i) the technological and intellectual extension of the embodied and embedded self, (ii) accepts the importance of language and communicative action in the construction of personal and social realities; but (iii) seeks a somatic understanding of embodied actions and their antecedents and consequences.</p>

Table 2 (cont.)

A Conceptual Matrix for Critical Environmental Education

FAY (1987)	FIEN (1993)	PAYNE
THEORY AND SUB-THEORIES	CRITICAL THEORY FOR EDUCATION FOR SUSTAINABILITY	A CRITICAL ONTOLOGY FOR EDUCATIONAL INQUIRY
<p>4. A theory of transformative action which</p> <p>(ix) isolates those aspects of society which must be altered if the social crisis is to be resolved and the dissatisfactions of its members lessened;</p> <p>(x) details a plan of action indicating the people who are to be the 'carriers' of the anticipated social transformation and at least some general idea of how they might do this.</p>	<p>Outlines</p> <p>(i) a strategy for altering those aspects of social structure which causes the environmental crisis and trapped society's members in self-defeating patterns of belief and behaviour; and details</p> <p>(ii) a strategic plan through which society's members can become agents of self- and social transformation.</p>	<p>Identifies and assesses</p> <p>(i) the culturally embodied self as a potential social, political, and environmental ethic</p> <p>(ii) the moral, social, and political implications of individual, social, and environmental actions and their consequences,</p> <p>Justifies socially</p> <p>(iii) the individual and collective course(s) of actions assessed; and accepts</p> <p>(iv) responsibility and accountability for individual and collective actions taken, or not taken.</p>
<p>5. A theory of the body which</p> <p>(xi) develops an explicit account of the nature and role of inherited dispositions and somatic knowledge;</p> <p>(xii) formulates a theory of body therapy;</p> <p>(xiii) spells out the limits which inherited dispositions and somatic knowledge place on liberation.</p>		<p>Renders</p> <p>(i) the body as a site of qualitatively different understanding and explanation in that its mode of being is organic, habituated, and corporeally penetrated and extended.</p> <p>Appreciates</p> <p>(ii) that as a mode of praxis with socio-environmental antecedents and consequences somatic knowledge is partial and incomplete; yet acknowledges</p> <p>(iii) that as a positioned and localised site of praxis and disclosure a body's being and sharing-in-the-world is organically, habitually, and corporeally dynamic, and hence both capable and changeable, but confined.</p>
<p>6. A theory of tradition which</p> <p>(xiv) identifies which parts of a particular tradition are, at any given time, changeable;</p> <p>(xv) identifies which parts of a particular tradition are, at any given time, not changeable or worthy of change.</p>		<p>Accepts</p> <p>(i) the dispositional inheritance, bonds, and legacies of previous patterns and conventions of family, community, and cultural life; while acknowledging</p> <p>(ii) their hold is not always apparent or immutable but selective, and hence</p> <p>(iii) accessible to critique and modification</p>
<p>7. A theory of force which</p> <p>(xvi) develops an account of the conditions and use of force in particular socio-political settings;</p> <p>(xvii) explicitly recognises the limits to the effectiveness of a critical theory in the face of certain kinds of force.</p>		<p>Appreciates, understands, or accepts the duality of</p> <p>(i) the weight of intellectual, bodily, social, political, cultural, and ecological influences; while accommodating</p> <p>(ii) the individual and collective capability to make a difference or exert influence, even if it is partial, limited, or constrained.</p>

Table 2 (cont.)

A Conceptual Matrix for Critical Environmental Education

FAY (1987) THEORY AND SUB-THEORIES	FIEN (1993) CRITICAL THEORY FOR EDUCATION FOR SUSTAINABILITY	PAYNE A CRITICAL ONTOLOGY FOR EDUCATIONAL INQUIRY
8. A theory of reflexivity which (xviii) gives an explanation of its own historical emergence, and in this portrays itself as a necessarily one-sided construction in a particular historical setting; (xix) explicitly eschews transcendental aspirations regarding the experience of all humans (those who might be oppressed), and gives up any pretensions to capture the 'essence' of liberation; (xx) offers an account of the ways in which it is inherently and essentially contextual, partial, local, and hypothetical.		Engenders (i) a personal and collective reflexivity that, morally, politically and ecologically, engages a dialectic of individual and socially embodied actions, interactions, and relations with local, global, and historical circumstance and situations.

Four points must be made about the critical ecological ontology. First, in the third column of Table 2 the matrix statements serve to question existing discourses and practices. Each statement is general, but connected to others and is offered only as a 'sensitiser' for the environmental educator to consider in relation to his or her own educational circumstances. The strategy is sufficiently generic to be adopted by different educators working in a range of settings—urban, regional, and rural. Elaboration of the nine questions in specific contexts is required for curriculum and pedagogical development. Second, different aspects of the matrix can be emphasised according to the experiences and capabilities of researchers, teachers and learners. Third, the strategy make no claims on preferred pedagogical practices beyond the general need to delve into and articulate an anticipatory narrative concept of embodied and embedded selfhood. That is, agents can tell real and possible stories about themselves given the appropriate cues and probes. Finally, the fine line between this strategy being educative or instrumentalist is justified by the objective that theorising be practical; that the deployment of Giddens and Fay for theorising critical environmental education be consistent with their respective theorising; and that the self-professed verdict of environmental education reveals a constancy of concern about unrealistic expectations, unrealised aspirations, and disparate epistemological commitments.

Re-theorising critical environmental education

The concerted pursuit in Australia of a critical praxis for environmental education is a significant educational development. In this inquiry I extend that theorising by sketching the contours of a critical theory of environmental education. The critical ecological ontology builds on many innovative strengths of environmental education. Within the critical

discourse there appears to be agreement that curriculum ideally be *interdisciplinary*, or ecological, in its content and methods. Disciplinary knowledge can also be brought to bear on *problem-based* approaches to resolving and acting upon *local, community-focussed environmental issues*. *Experientially driven* pedagogies, underpinned by a strong role for perceptual and valuing activities, is a constant. Practices, theories, and research aim to be *socially critical* while supporting inclusiveness, equity, and strong democracy. Individual and collective *change and action* arising from environmental education needs to be *deliberated* and *justifiable* according to broader historical, social, material, economic, and, more recently, cultural contexts. The term *sustainability* is becoming more popular. This loose consensus marks out the conventional ‘contours’ of critical environmental education which, without the critical social commitment, has the potential to lapse into a regressive and conservative perspective. The re-theorising I conclude with acknowledges the critical contours, for it is appropriate to do so, but re-locates environmental education in the critical ecological ontology developed scientifically, critically, practically and non-idealistically in accordance with Giddens and Fay.

A critical ecological ontology rests largely on radically establishing the corporeal body as a site of cultural disclosure and mode of individual and collective praxis for environmental problems and issues—revealing but limited, personal in the first instance but social over time and space. It recognises there are no guarantees. The sensitising question ‘how are environmental problems embodied?’ invites numerous possibilities for environmental educators. To be sure, numerous perspectives of an ‘embodied crisis’ are anticipated. Contextualist environmental ethics of the ‘relational’ type are now in the ascendancy while the ascetic inspired calls for minimising consumption and developing conserver practices appear to be in decline. ‘Crisis’ forming relational predicaments of ‘care’, ‘self-realisation’, and ‘biocentric egalitarianism’, ecological balance, limits to technology, mother earth reverence, animal rights, re-enchantment and so on will differ for educators influenced by the thoughts of ecofeminists, deep ecologists, Leopoldians, Gaians, animal liberationists, and social ecologists—recognising that each of these categories is internally diverse. Put another way, irrespective of an educators ethical preferences, but assuming a critical commitment, the embodied crisis might be tackled by asking ‘in individuals’ lived experience what can be disclosed about the residues, deposits, or sediments of selected environmental problems and issues?’ It seems to me that ecofeminists and animal liberationists, for example, or science, music, or health educators could usefully respond to such a question from a variety of vantage points.

The narrative concern of establishing embodiment as an embodied

mode of critical ecological consciousness and activity leads to the sensitising questions of how it occurs. The pathways 'into' and 'out of' the culturally etched body demand elaboration of the mundane routines of everyday life and their social timings, settings, and symbolic inscriptions. Embodied actions and their culturally embedded pathways provide the living 'texts' for curriculum. These texts can be 'read' and articulated as has been illustrated with the examples of diet and lift riding. Numerous opportunities again exist to selectively investigate, compare, and contrast among individuals and groups those historically, materially, technologically, and culturally mediated habits and routines of daily life at home, school, classroom, neighbourhood, work and play that sustain ecological problems and issues. The term 'sustainability' means little. Its use contexts are lost in the abstractness of political rhetoric and globalising ideals. In a critical ecological ontology the meaning of sustainability is changed to the problematic of maintaining an ecologically sensitive way of 'being-in-the-world'. This 'maintenance' is influenced by a myriad of environmental antecedents and consequences that, in curriculum praxis, can be made more understandable and, hence, more manageable. Thus, the usual locus of responsibility for ecological sustainability is reversed from 'out there' to 'in here'.

How the sustaining of the embodied and embedded nature of environmental predicaments occurs can be examined in host of ways. When examining the patterned conventions of actions, interactions, arrangements, and expectations the implicit and explicit 'rules' of habituated and tacit behaviours, like riding a lift, can be made visible. Also amenable to scrutiny is how language and its 'ordinary' contexts of interpersonal use and exchange either support or deny an ecological consciousness and, perhaps, praxis. Language in its print and electronic capacities, however, is a more complex problem for inquiry due to the 'extraordinary' technological capacity to 'virtually' inscribe identity formation, social images, cultural understandings, and other 'resources' implicated in the reconstitution of environmentally problematic ways of life. The appropriateness of change, as a self and social possibility in an anticipatory narrative, can then be crafted. I have discussed this matter in detail elsewhere, specifically where first-person narrative has been used to personally construct and publicly claim an environmental ethic (Payne 1994). To be grappled with then is the question, 'What pathways into and out of the body might be modified so that environmental tensions are appeased?'

But, morally and politically the extent of anticipated change will need to be adjudicated in light of the pragmatic question of, 'What are the consequences for self, others, and the environment if the pathways are changed knowingly?' Fay (1987) and MacIntyre (1984) are correct when they assert the ecological value of narratives that are contingent, multiple,

and interdependent. Each person's anticipated narrative concept of self is linked with the other's. Hence, in social action theories we are inextricably linked with present and absent others as a result of interactions and consequences of actions. And, on the basis of theorising Giddens and Fay for environmental education what also demands consideration is how 'knowledgeable' responses to the preceding question might be obtained and then articulated. As an important aside, one aspect of environmental education that demands explanation is its track record. If, as many believe, environmental education has not brought about the changes it aspires to then the consequences of these failures need to be examined from the perspective of those effected by the failures. Needed for the critical discourse of environmental education is a defensible moral, social, and political response to, 'What justifications might be offered to those who are positively and negatively effected by the direct and indirect consequences of actions taken socially and environmentally in environmental education?'

This ongoing question foregrounds a major concern for curriculum theory raised by Giddens and Fay. It is important, practically and non-idealistically, to consider the boundedness of morally relevant and politically effective actions. In other words, curriculum theorists must ask what is doable and achievable, and what hubris of self in discourse is socially and environmentally defeating? This predicament is worthy of attention as many feminists will tell us. Actions, in the first instance as ontological revelation, are inevitably personal and political but 'conducive' to social and, hence, structural or institutional backlash. If the critical discourse of environmental education dwells on the 'big' and educationally attractive environmental problem out there somewhere syndrome it perpetuates a group exuberance, or evangelism, for fixing up the problems of others. Personal responsibility and ethical accountability might well be displaced. Non-involved but affected others are potentially neglected. Hence, not bounding the pedagogical action of environmental education in its critical praxis has the propensity to exacerbate the problems Fay associates with critical social science and its unbridled valorising of collective autonomy.

The extent, obvious breadth, and implications of a critical ecological ontology is not meant to dissuade the task of developing a critical praxis for environmental education. For, it seems to me, that some or a lot of its sensitising probes can be addressed thematically—be it through an examination by youngsters of chewing gum and its contexts of agency and structure, or an investigation by adults of the household contributions to the Greenhouse effect and its contexts of structure and agency. The moral and political implications of the contours sketched for inquiry and praxis might be perplexing. In conclusion, a way to deal with these issues is summed up neatly in Seyla Benhabib's notion of an enlarged mentality.

Facilitating this enlarged mentality rests on educators mobilising a 'sensitivity' and 'sensibility' of the embodied and embedded agent. This has been anticipated in the formulation of a critical ecological ontology. Says Benhabib (1992, p. 54), '[t]he more we can identify the different viewpoints from which a situation can be interpreted and construed the more we will have sensitivity to the particularities of the perspectives involved'. The combination of ontological commitments and epistemological approaches such as narrative inquiry into the bodily text is supportive of this enlarged frame of reference for both curriculum theory and pedagogical praxis.

A not so final note

Re-theorising the critical discourse of environmental education according to Giddens' and Fay's 'ontological turn' is supported by many of the epistemological innovations of environmental education. How curriculum practices emerging from a critical ecological ontology might then be modified according to specific needs, interests, and experiential fodder of different and specific individuals and groups remains an open invitation. A critical ecological ontology, I submit through the explanations provided above, is an alternative way of redeeming dualistic thinking and its associated values hierarchies while promoting a sense of attachment to and responsibility for local and global environments. It inverts the alleged usual locus for moral and practical (ir)responsibility from the selfless 'out there' to an accountable and changeable embodied 'in here'. Hence, it contests the cartesian distancing of the environment from the self implicit in that syndrome. Inevitably, an ontologically focussed version of environmental education challenges the socially disconnected individualism and unencumbered self-determinism of the disembodied rational and autonomous self which, arguably, is at the practical and philosophical root of ecological problems. In short, the ontological twist for curriculum theory pursued here posits that environmental problems and solutions are individually embodied and socially embedded problems and solutions. For environmental education, the ecological crisis might, metaphorically speaking, be a curriculum crisis.

Of particular interest also to this inquiry is the mood of the postmodern-modern debate. It has created both a sense of uncertainty and a reason for many theorists and practitioners of critical persuasions to reinstate the ethical and the political as a central concern. To the extent the terms modern and postmodern are 'slippery' and the mood of the debate is 'amorphous, protean, and shifting ... but powerful' (Bernstein 1992), critical theorists of education appear to be grappling with finding ways through it. The reflexivity of social theory and educational inquiry in curriculum theorising and pedagogical practices continues to challenge educators of every ilk to be relatively clear about the practical, moral,

social, and political consequences of their discourses. Not to deal earnestly with their implications, it seems to me, is tantamount to a 'lack' which circumvents the aspirations of the critical discourse, in effect a theorising largely devoid of a practice. It is unreasonable to expect solutions will suddenly appear. It is possible the critical ecological ontology version of a curriculum praxis pursued here can foreground those ethical and political horizons in a practical and open-ended way which, with ongoing debate, can further the project of a critical discourse of environmental education.

Notes

- ¹ John Fien's (1993a) project of developing a critical curriculum theory for the environment suggests Giddens' work is capable of dealing with a number of problems inherent within the field of environmental education. Initially, Fien (1993a, p. 14) identifies the importance of unearthing the ideological foundations of environmental education. These are characterised as approaches *about, through, and for* the environment. Fien concludes the first two deal inadequately with the structural causes of environmental problems. They also downplay the active role education needs to play in fostering the critical values and action objectives of environmental education. Fien's second phase of theorising links the approaches of 'about' and 'through' the environment with a technical prescription of curriculum and pedagogical practices. According to Fien a political orientation is missing from the technocratic perspective. A political orientation would include the development of a 'critical environmental consciousness, critical thinking and problem-solving skills, an environmental ethic based upon the values of social and ecological sustainability, and the knowledge, skills, and values of political literacy and critical praxis' (p. 75). Fien's third phase of theorising concludes that a critical curriculum theory for environmental education must be based upon 'a language of critique and possibility' rather than the more conventional sociology of curriculum that emphasises reproduction theory. Finally, Fien (p. 87) introduces Giddens' structuration theory by elaborating its key themes and their treatment in educational theory. Fien concludes with a short account of critiques of Giddens' theory.
- ² Ontology is a term that many readers will not be familiar with. It is a complex term. Giddens (1984) is concerned with 'human being and human doing, social reproduction and social transformation'. In developing a series of 'explanatory propositions of a generalising type' Giddens' intent is to disclose for social (and curriculum) inquiry various temporal and spatial modes of human action, interaction, and association that (re)constitute society (such as environmental problems and issues which in the later Giddens have assumed a level of prominence). Giddens wants to 'get at' the two way relation between agents' actions and the 'conventions' (or tacit and formal rules and resources) that agents 'draw upon' in 'getting along' in the mundaneness of everyday lived routines of social life. Hence, his 'duality of structure and agency' which, if we accept that environmental problems are a consequence of individual and collective actions and interactions, is fundamentally important to reworking the idea of praxis. Giddens acknowledges the importance of epistemological concerns in social inquiry. According to Giddens, however, the never ending disputes about epistemology draw attention away from the more fundamental questions of what it is to be in the world. Any student of environmental education will appreciate Giddens' argument. A great deal of attention has been devoted to models of instruction that endorse

linear models of organising experiences, learning certain information, developing attitudes, clarifying behaviors and, subsequently, behaving in 'environmentally responsible ways' that reflect certain 'citizenship action skills.' While not downplaying the importance of epistemology, and the inevitable connection that must be made between ontological explanation and epistemologies that advance living ecologically, the ontological 'turn' I pursue here for a curriculum praxis identifies a significant point of departure from the 'mainstream' applied science discourse of environmental education and the alternative poststructural discourses that concentrate on the linguistic (de)construction of representations of social reality. Furthermore, Fay's ontologically driven amendments to the epistemological route presumed for emancipation culminates in a limits to rationality and change thesis. The version of a critical praxis in environmental education developed here through Giddens and Fay is somewhat different to other critical aspirations and expectations. Fay's entire book is devoted to examining, clarifying, and revising the ontological presuppositions of critical social science. These fundamental ideas will be developed contextually in the remainder of this essay.

- 3 For example, there are few explicit 'rules' about how to act in a lift. But anyone can see that there is a convention or pattern of action and interaction 'expected'. People stand with backs to the wall, avoid eye contact, cease or avoid conversation, gaze at the changing floor numbers, and so on. Agents 'knowingly' do this but structurally it is reproduced over time and space. Giddens' duality identifies how we both enable and constrain our actions and interactions.
- 4 With some creative modifications the matrix and contours can be adapted to other 'issues' based approaches to curriculum, for example health, multicultural, social, physical, violence, and drug education.
- 5 I deliberately set out to stretch the analogy in the following example. Part of Giddens' thesis is to clarify the 'extensional' spread, or globalising tendencies, of high technology/modernity and its emerging industrial/financial 'structure'. One consequence of 'extensionality' is the 'collapse' of time and space. Increasingly time and space are irrelevant to the larger techno-trajectory of modern existence. Time is what many don't have enough of while space and place are often barriers for those not pursuing a romantic return (in time) to nature. Events in one part of the world can have immediate effects in another. The artifactual, intellectual, and bodily embodiment of technologies, including the chemical and fast food industries exemplify (local) disembedding and (global) re-embedding mechanisms. For example, home-cooked meals and family interactions are changed as large scale dining and relations with symbolic tokens such as Ronald McDonald assume an increased 'reality' in the global village. These mechanisms create the contradictory condition of ontological security and existential anxiety Giddens wishes us to address. Christopher Lasch's (1984) notion of the family as providing a 'Haven in a Heartless World' typifies this point. I make mention of this complex practical ontological phenomena for other reasons which will be developed further. The Cartesian inspired separation of 'I' and the world, often reproduced in education, enacted in curriculum and pedagogy, and constantly criticised by many seeking to redeem dualistic thinking and values hierarchies, has been a constant theoretical and practical barrier to 'effective' environmental education, amongst other things.
- 6 Clearly, the way in which I use the term ontology does not seek the absolute essence of 'lived experience' or delve into the foundational question of what is 'human nature' as more classical positions in philosophy have sought to answer.

- 7 Historically, dualisms have privileged the mind over and against the body, the rational over the emotional, and so on, as well as distancing the world (and its ecological 'crises') from the self.
- 8 To my knowledge there have been few attempts to develop an ontology for education. Max van Manen's contribution to educational research is one application. But, for the purposes here Robert Brown's (1992) assessments of van Manen's contribution to phenomenological research in education signals support for how Giddens and Fay are deployed here. About the relation of educational research and pedagogical practice aimed at by van Manen Brown notes:
Instead of approaching pedagogical practices directly in the original context of the lived experience, the majority of educational theorists are satisfied with manipulative reconstitutions of experience (p. 54).
Similarly, Brown concludes about the propensity for curriculum theorists to capture the nature of pedagogy:
This failure occurs because research into curriculum theory development is seen as an epistemological—not ontological—inquiry ... Good curriculum theory, or *curriculum theory of the good*, helps us as pedagogues build a place, or *edifice*, for students to experience being-in-the-world in all its dynamic variances (p. 55).
Brown's problematising, through van Manen, of the idea of educational experience raises the moral and political significance of connecting pedagogy, curriculum, and theorising, as noted earlier by Fien (1993a, p. 95). In broad terms, Giddens' (1984, p. 60) notion of 'routinization' and Fay's (1987) account of an *ontology of activity* conceptually lend themselves to practically relocating curriculum and pedagogy in 'original' educational contexts. 'Routinization' has been exemplified in the main part of this text. Clearly, van Manen's and Brown's contributions (here) should be understood as raising the moral and political ante in curriculum and pedagogical theory of problematic and highly politicised terms like 'essential', 'original' or 'authentic' experience. Harking back to the troubled development of environmental education many would agree that educational 'experiences' are all too often contrived instrumentally so as to validate particular interests and disciplinary claims for epistemologically and methodologically superior vantage points.
- 9 A detailed theoretical explanation, justification, and development is not possible within the confines of publication requirements.

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