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Critical Curriculum Theory and Slow Ecopedagogical Activism

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Abstract

Enacting a critical environmental education curriculum theory with 8- to 9-year-old children in 1978 is now 'restored' in a 'history of the present/future' like 'case study' for prosecuting five interrelated problems confronting progress in environmental education and its research. They are: the intense heat of the Anthropocene; the accelerating speed of the Dromosphere; the deep cuts of neoliberalism's policing of the cognitive capitalism of the corporate university and public education; the entrepreneurial entry of sustainababble into the discourse of education; and the digital colonisation of its pedagogical practices. The once radical promise of environmental education to serve as a critique of education partially through its 'language' (Le Grange, 2013) of empowerment, agency, transformation, contestation, ideology, ethics, action, praxis and change demands revitalisation; hence, this belated restoring of the 1978 case. The time is right; at least in some academic/educational settings where the 'new materialism' notions of critical, agency and action remain much more than a fading memory or convenient text. New theory helps restore this old curriculum theory and its slow ecopedagogical activism. In this 'old', the critical curriculum theory (re)positioned young children and their teacher as action researchers of their own embodied socio-environmental relations. Through highly inclusive and participatory practices of outdoor and indoor ecopedagogy, children became ethically active 'citizens', capable of democratically enacting political and Political change. This 'active responsibility for the environment' was, indeed, a key purpose, or promise, of environmental education when the field was formalised in the 1970s. Elements of children's (eco)aesthetics-environmental ethics and ecopolitics are described in this case account of the 'environmental design' of a radical curriculum innovation that critically emphasised the 'humanly-constructive' educational conditions that enable agency (Payne, 1995, 1999a). Such enablements were only ever assumed in the 'socially critical' theorisations of curriculum and pedagogy developed in Australia in the early 1980s. For researchers, this partially autoethnographic narrating of the old case describes the children's (embodied) experiences and locally emplaced agencies in newer theoretical 'figurations' of their 'body~time~space' relationalities. Children's outdoor 'expeditions', interdisciplinary inquiries, literacy development, scientific investigations, and personal and public activisms are described. Revealing these micro figural relationalities in slow ecopedagogical contexts of the environmental design of education (Payne, 2014) is consistent with Robotom and Hart's

(1993) too often forgotten 'old' call for researchers and practitioners to clarify the presuppositions they make about the trilogy of ontology-epistemology and methodology in framing, conceptualising, contextualising, representing, and legitimating the research problem and its questions. This restorying and history of the present/future is alert to (but cannot develop) aspects of contemporary 'high' theory drawn from the humanities, social sciences and arts that prioritises the politics of ontological deliberation and the ecologies of things, (re)claims a material disposition in empirical inquiry and critique while speculating about non-anthropocentric 'thought' responsive to the 'new' rallying point of, for example, the Anthropocene. In sum, new theory helps restory the critical, creative, expressive and experimental forms of re-theorising the persistent problematic of human and non-human nature relations and the role of education — well on display in this 'old.' This revitalised history of the present/future aims to revive critical optimism and imagination about how agencies of socio-environmental change once promised by critical environmental education and its research can be re'turned'. The article concludes with some post-critical retheorising of key critical components of the 1978 curriculum theory.

1978: Children's Stories of the Environmental Program

Children's impressions of excursions:

(1) *Sewrage Outlet*

On Monday at 9.30 our grade went on an Investlgate to 3 bad Changes and 3 Good Changes and wen up went up the boat Ramp there was Sewrage was going into the beach and perl puailtionng the water the fish were dieing and poisoning the fish and wen you get fish and chips you should look out for poisoning. (Andrew, 8 years old, June, 1978; Castro et al., 1982b, p. 147)

(2) *Swimming Pool*

The Swimming Pool is a good change because in Summer it is hot. We don't want to go to the boat ramp and swim in seaweed and pollution water. I think the pool is better because even the poor fish die at the boat ramp and what would we have to eat? The pool helped me, my family and my fr fra friends how to swim. You cannot swim in the sea. (Julie (8 years old, June, 1978; Castro et al., 1982b, p. 147).

Andrew, six months later:

Dear Mr Gude

Can you help us we need a treatment plant at Clifton Springs area. Because it is killed fish and we have been doing experiments for five months now we need a treatment plant there. We hop that you can put one there. We have been studying the bay and we have watering plant and they died. We thank at it is polled.

Your sines, Andrew

(Andrew's letter to a local State Member of Parliament, December 4, 1978; Castro et al., 1982b, p. 152.

Dear Mr Gude

The reason why we are writing this letter is to help clean the Corio Bay. We are worried about the pollution. The class has been doing a whole lot of experiments to find out if the water is polluted. We have been on a whole lot of excursions to the boat ramp and we have collected some dirty water ... We have watered one plant with drain water and another one with tap water for a few weeks. The tap water plant has grown much faster and healthier than the drain water plant. We did another experiment with a fish. We put the fish in some clean water. He liked it and then we put him in some drain water. He did not like it so we took him out. At the boat ramp, the same thing has been happening because fish have been dying from the pollution and floating into land ... Could you help?

(Marcelle, 9 years old, December 1978 — Extracts from two-page letter; Castro et al., 1982b, p. 156)

1979: The Minister of Conservation's Response

The Geelong Advertiser:

The girl, Marcelle, wrote the letter as apart of a class project that included conducting experiments and making local observations ... She then wrote about her findings to Mr Phil Gude who passed the letter on to the Minister of Conservation, Mr Borthwick. Mr Borthwick decided to reply in person to Marcelle because he was 'impressed by her letter and by someone her age taking an interest in pollution ...'. Clifton Springs needs a treatment plant, he told Marcelle when he called on her at her parents' home yesterday. Local MLA for East Geelong, Mr Phil Gude, who accompanied Mr Borthwick on the visit ... Mr Borthwick said her letter was thoughtful and sensitive: 'I get quite a few letters but not in those terms where the child has developed a point of view by doing a series of projects ... most say 'what are you going to do about ...? Few of them have investigated their local resource spot.'

Marcelle's letter was of HSC standard ... Marcelle said she would give some thought to Mr Borthwick's suggestion about becoming a scientist.

(Extracts from '9-year-old takes an interest' in The Geelong Advertiser, January 20, 1979; Castro et al., 1982b, p. 157)

1978: Teacher Reflections

This program was implemented so as to promote a more meaningful and relevant approach to education. ... Environmental education possesses a great deal of interdisciplinary potential. ... Aspects of the program have illuminated some areas of the teaching / learning process. For example, I am now more aware that concepts can be developed by learning through 'direct' experience and that in some cases this is a far more gradual process than I had anticipated ... because of the advantage offered to a child's learning experiences arising from an interdisciplinary approach to education, I will be endeavouring to include thematic teaching in other general studies areas. (Phil Payne, Grade 3 teacher; Castro et al., 1982b, p. 140)

2015: Thirty Years+ Later; Restorying the Past/Passed

Now I'm a teacher educator, researcher and academic working in a university in Australia. Things are pretty dismal in the *sustained* neoliberalisation of the entrepreneurial university and its post-intellectual *educational* (sic) development of

cognitive capitalism (e.g., Cooper, Hinkson, & Sharp, 2002). Ironically, among all the ‘sustainababble’ of contemporary education, I have often wondered if Andrew still eats fish and chips. I recall he struggled with his classroom-based lessons in spelling, writing, reading, science, and social studies. As can be seen in the above extracts, Andrew’s (eco)literacy (sic) about a very ‘fishy’ problem improved dramatically over the 5 months of his slow, experientially driven environmental education. His mention of the ‘poisoning’ of fish was very important to him and his mates. Did Marcelle become a scientist or environmental activist? Why did a State Minister of Parliament (of Conservation, no less!) respond so favourably to these children’s representations of their investigations that included the eight experiments they devised to ‘test’ the drain water; and in so doing politically legitimise the educational and citizenship values on strong display in this ‘old’ case study.

Many years have passed; so (re)storying that good old ‘once upon a time!’ beckons. The slow passage of that 30 years+ flow of time since these young children took responsibility for the environmental consequences of a drain they investigated over an extended period of time allows me now to make additional theoretical and empirical sense of the past as it does, or does not, shed needed light on the present and, perhaps, future status of environmental education and its critical aspirations.

Elsewhere, I have concluded environmental education curriculum theory and its relationship to research has fallen on extremely hard times in what is now popularly referred to as ‘neoliberalism’ (Payne, 2006). Conversations with colleagues around the world over the past decade converge broadly on the paralysis of environmental education and stasis of environmental education research. The many reasons for this hopefully premature suggestion of the near ‘death’ of the field cannot be described here. Most recently, others in environmental education research have applied the well overdue blowtorch to various neoliberalisms in environmental education spotted ‘out there’ somewhere (Hursh, Henderson, & Greenwood, 2015). But, sadly for this old researcher, that blowtorch avoided reflection on environmental education research itself, or its vexed relationships with curriculum history, theory and pedagogical development. We need to look elsewhere for that critical reflexivity within the field where insightful examples are few and far between (Lotz-Sisitka, Fien, & Kethoilwe, 2013; Stevenson & Evans, 2011). Hence, this old restorying for a history of the present/future and, strangely with ‘new’ theory in mind, a sense of renewed optimism and vitality if we take critical theory seriously for more than a fleeting moment.

A Short Side Note on Theory and Methodology; Materialist Histories of the Present/Future

A *history of the present* type restorying of the past flags my broad intentions for this restorying effort. It proceeds via ‘memory-work’ (Kaufman, Ewing, Hyle, Montgomery, & Self, 2001) of that passed/past *lived experience* of the ‘case.’ This text’s *post-critical* narrative incorporates relevant aspects of ‘new’ theory (e.g., Coole & Frost, 2010) while openly conceding its many limitations in adequately or accurately representing the passed/past case. There are many things in the past and, indeed, the present that elude full or partial re-presentations of them in a text, as a production of a discourse, with its interpretations and acknowledgment of what is always ‘non-representational’ (Thrift, 2008). This is most pronounced when texts now need to find ways of incorporating a sensuously material or thingly affectively/aesthetic spatial representation (Abram, 1996; Pink, 2009) that, indeed, interests many environmental educators. Storying (and, therefore, discourses about stories) is wide open to

interpretation, so this history of the present departs from the Foucauldian approach to historicising environmental education research, contexts and theories (Ferreira, 2013) in the way that the approach to textualising the lifeworlds and lived experiences of subjects emphasises the governmentalities of a particular discourse. My alternative (e.g., Payne, 2005) appeals to the everyday realities, interactions, relations and events or activities experienced by the researched-children/researcher-teacher/author in 1978.

The time for critical environmental education and its research to materially reinstate itself in the critically *real* of everyday materialisms is right. 'High' theory across the *post* sciences, social sciences and humanities in what has been referred to as 'new materialisms', 'speculative realisms' and 'post phenomenologies', among others such as how 'non-human', 'magical realisms', and 'critical realisms' respond belatedly to *thought* and the presence of 'matter' and 'things'. New/high theory takes seriously the Anthropocene (e.g., Barad, 2005; Bennett, 2010; Braidotti, 2013; Connolly, 2013; Grusin, 2015; Johnson, 2013; Latour, 2013; Morton, 2012; Sayer, 2000; Shaviro, 2014; Sparrow, 2014). Social science, which drives a great deal of environmental education and education is, indeed, 'messy' and demanding of 'assemblages' of different perspectives and approaches to deal with what is 'real' (Law, 2004) or that which apparently 'matters' (Flyvbjerg, 2002). Aspects of that (ontologically political) assemblage of theory are used to assist the partial post-critical (re)turn to 'new' materialisms that once upon a time were fairly real (e.g., Connolly, 2010; Edwards, 2010), even spatially and geographically (e.g., Harvey, 1996).

Although the concept of the Anthropocene¹ is debated, as is its geologically planetary onset within what also is temporally referred to as the Dromosphere (Virilio, 1977/2006, 2010),² the notion of the Anthropocene serves as a vital target not only for many scientists, but also for those high theorists who use that name as a lever to critique a great deal of Western thought and uncritically accepted and naturalised anthropocentric epistemologies. The notional use here of the Anthropocene serves, potentially, as a timely reminder for a newer wave of critically oriented environmental educators (e.g., Kopriva, 2014) about what conceptually and materially is at stake in research, curriculum and pedagogical experimentations and praxis. Speed and its hyper acceleration in the postmodern have so far escaped theoretical and empirical scrutiny in the textualisation of environmental education and its research (Payne, 2013). Hence, a return to the materialisms of the slow in this case restoring and history of the present/future.

Although divergences and differences exist in both high theory and in *post-critical environmental education research* (e.g., Hart, 2005), there are some broad (and timely) thematic convergences between these vastly different fields of high thought and practice. They include a heightened interest in ontology and its politics as they 'turn' to (re)introducing the non-anthropocentric and the non-human (or 'more' or 'other' than human) into overprivileged anthropocentric epistemology in Western thought patterns, habits and worldviews; their material actancies and agential relations as self-organising things and matter in their creative ecologies that emphasise the affectivity of all *beings* in their *becoming*. As such, these ontologically (and epistemologically) important *politics of aesthetics* 'thought experiments' loosely inform a revitalised 'philosophy of nature'³ that, for the purposes of this particular autoethnographic restoring of the old, contributes to this narrative of the case study (Hart, 2002). Together, my renarrated history of the present must be seen as part of a much larger program of research invoked by my 'critical ecological ontology for inquiry' in environmental education research or, more plainly, an education *for being for the environment* (e.g., Payne, 1995, 1999a). Word

limits prevent detailed elaboration of the links between this restoried case and relevant theory.⁴

Theory as Praxis and Action

For purposes of practicality rather than theoretical emphasis and methodological intrigue, this curriculum history highlights four basic but very serious questions for critical environmental education pedagogical, curriculum and research development that should be (conceptually) ‘read into’ this case, namely:

- the importance of *experience* in education (Dewey, 1938/1991), or role/place of *experiential education*;
- the ordinary, everyday embodied and emplaced conditions and associated time-space *structures* that simultaneously enable and constrain *agency* in schooling. In so doing, localised inquiry and action by the researched is permitted or denied. A prime example of the agency-structure dynamic, or stasis, is the school timetable that physically and geographically demands learners are bodily positioned for *indoor learning*. This material constraint spatially/geographically and environmentally ‘places’ severe limits on the outdoor experiences of the subjects (learners) and subject matter under investigation. That is, significant epistemological (pedagogical, learning) limits are placed on learners’/subjects’ (lived) *ontology-epistemology of being and becoming* (Payne, 1995, 1999a, 2006);
- the critical reflexivity, therefore, required by the pedagogue/researcher about the learner/researched subjects of inquiry that incorporates indoor and outdoor, and human and non-human — that is, the *post-critical framing of inquiry* (Hart, 2005; Payne, 2005); and
- their practical implications, in this instance of curriculum and pedagogy, for children’s (and teacher-researchers!) actions based on ‘sustainably’ slow interdisciplinary case inquiries that bodily occur in and over variable time-space (e.g., local neighbourhood, bay, drain pipe) well beyond the *environmental learning* occurring indoors through such experience (e.g., Rickinson, Lundholm, & Hopwood, 2009).

Experience and education are not well understood in education and, indeed, environmental education and its research. Environmental education discourses have persistently highlighted the significance of experiential and interdisciplinary inquiry into real world environmental problem and social issue identification, democratic deliberation about them, ideological critiques of dominant paradigms of thought and practice, associated values clarification and reconstruction, and responsible action, individually, collectively and, more recently, globally. Experiential education has suffered, a point I will return to later.

Time and space are also poorly understood in environmental education as a source, *process*, and outcome of meaning generation and making in education. This lack is largely due to the everyday ‘grip’ or ‘hold’ in schooling and classroom organisation-management that the official timetable materially, structurally and symbolically imposes on the agencies of teaching and learning and, therefore, the adequacy (or not) of the *ecopedagogical* relations between indoor and outdoor environments, learner and teacher. This absence is also due to the chronic lack of theorisation and empirical insight in environmental education research. This huge gap in the discourse of environmental education leads to another failure to intervene ‘early’ in early years education, where recognition of the ‘playful’ importance of formative experiences of body~time~space relationalities most regularly occur (ecopedagogically) in children’s relatively ‘undisciplined’ bodily movements in various settings, as locales of self-understanding, meaning generation and knowledge production (Payne, in press). The practical imperative

in this case study for a slowness or slowing of early intervention ecopedagogy in the times-spaces playfully and experimentally inhabited by these children occurred over a number of months within the limits of the official timetable.

That ecopedagogical slowness was generated from the prescient curriculum theorisation of environmental education restoried here. Slowness (temporality) of the curriculum intervention was ‘deeply’ attuned to the (spatialities) of children’s ‘home’ or nearby dwelling place(s) in the neighbourhood (Castro et al., 1982a, 1982b). Most important, therefore, was the need in this case to enact an environmental, or ‘socio-ecological’ design of curriculum *as* ecopedagogy and how such praxis was consistent with the lived day-in, day-out of the material–historical circumstances of young learners like Andrew, Julie, and Marcelle. The environmental design of the curriculum theory was one that they could intimately and affectively relate to and engage with because they experienced, felt and somatically ‘knew’ that environment in which they walked and rode bikes to school, socialised in after school and visited friends, played sport and went for a swim on weekends. Put differently, (curriculum and pedagogical) theory was embedded (embodied) everyday practice of (outdoor) environmental experiences.

Here, therefore, in full view of the alleged theory–practice (or rhetoric–reality, or philosophy–grounds) gaps (e.g., Stevenson, 1987/2007) that have dogged the progress of critical environmental education for so long is, as a history of the present, an empirically informed example of creating a theory–practice *nexus* in the critical, everyday and material realities of a curriculum praxis driven by the pedagogies of experiential education. As gestured to in the introductory extracts, the materiality/thingness of time (Birth, 2012) as slow ecopedagogy and an experiential *condition in education* enabled numerous (inter)disciplinary ‘literacies’ (sic) to be developed in a wide range of traditional curriculum areas timetabled into the schooling day. Below, for the purposes of illustrative casing, I highlight one example only of how the educational condition of time (in the geography of excursions in the neighbourhood) fostered the gaining of ‘scientific’ literacy and associated numeracy in environmental education.

Background 1: (Re)positioning the Learner as the Researcher and Researched in Curriculum Theory as Agents of Change

In the particular ‘environmental design’ (Huebner, 1967/1987, p. 329) of the curriculum design described above, (young) ‘learners’ were repositioned as active ‘researchers’ of a local everyday urban/coastal problem existing in their neighbourhood. The ecopedagogical practices of this positioning is described in far more detail below. The curriculum ‘theory’ presumed these locally *emplaced* children could reasonably ‘voice’ their understandings and lived concerns about problems and issues they confronted, not the teacher. And, consequently, be ‘listened’ to attentively by the teacher, as researcher. This environmental design of the curriculum’s social design paid strong attention to, within the ‘limits’ of about thirty-odd 8- and 9-year-olds, their individual and collective everyday *being and local dwelling* and active immersions, moving perceptions and sensations, and ‘wayfaring’ like meaning-making capacities in *their* environment (Ingold, 2000, 2011).

This redesign of education recognised and respected children’s capacities of affectively, as well as cognitively and physically, actively interacting and engaging their sensorium (Stoller, 1989) so as to somatically understand, identify with, emotionally reveal, problem-solve, deliberate about and explain the underlying *conditions* of their lived experiences of the environment they ‘inhabited’ as

these local, social and cultural conditions were being shaped environmentally or ecologically by changes they felt to their immediately temporal and spatially proximal place (sic).

That is, the curriculum design treated children as environmental and social *agents* (Stevenson & Dillon, 2010) — as young people experienced and interested enough in their real, material, everyday world to have the capacity to ‘make a difference’ and be empowered sufficiently enough through good environmentally attuned and designed curriculum to do so, should they freely choose. Reiterating Huebner’s concern about temporality, Emirbayer and Mische (1998, p. 962) conceptualise (human) agency as a ‘temporally embedded process of social engagement, informed by the habitual past but also oriented projectively to imagine alternative possibilities for the future and toward the evaluation of the present and its contingencies’. Emirbayer and Mische, like many before them, understand that human agency (and social action) cannot be understood outside the various habitual, practical, social, technological and environmental, or ecological, *structures* that culturally shape agency (Archer, 2000; Giddens, 1984). Agency, therefore, occurs within the geographically organised flows of time that, simultaneously, are structured spatially by the various social conventions and arrangements that constitute the historical environmental design of, in this instance, children’s lives in home backyards, school, neighbourhood, playground, streetscape, urban and open spaces and places. The coast/bay these children studied was part of their (re)discovered ‘backyard’ that upon closer scrutiny, via two experiential/walking field excursions/expeditions, changed for the worse!

This preferred conception of *environmental agency*, as it is relevant to children’s lives, backyard experiences, and voices must be treated cautiously and sensitively so that its relevance of understanding and action is high, individually and collectively — a challenge for many contemporary children (and adults) now experientially immersed in an intensified vicarious ‘screen culture’ as abstractly but speedily/fast ‘inhabited’ — temporally, spatially, affectively and physically, and ‘materially/really’ at home and in the school (Payne, 2003a). An important lesson about ‘slow’ must be gleaned from Huebner’s keener insights into the temporal, historicising of man (sic) before the complexity of learning can duly be considered as an ‘outcome’ of education. Put simply, any educational effort to bring about change or transformation, or the agencies enabling it, must incorporate the social design of curriculum and its anticipated pedagogies into the environmental design of accessible body~time~space experiences of and for education. The case described below achieves this retrospective demand.

Background 2: Re-Positioning the Teacher and the Researcher as Agents of Change

The case curriculum theory and study was conducted in 1978 by the author of this report, then a Year 3 primary/elementary school teacher. I was invited by academic staff working in the School of Education to pilot a new environmental education subject being developed for preservice teacher education at the then very new and innovative Deakin University (Castro et al., 1982a, 1982b). Those teacher education researchers needed a teacher in a local school to trial their curriculum theorisation in the children’s ‘real’ world of a school. Their innovative approach to theorising curriculum as praxis was partly inspired by the series of United Nations conferences in the 1970s that formalised the field of environmental education (e.g., Palmer, 1998). These curriculum theorists welcomed the interdisciplinary and experiential ‘license’ provided by the combination of a new university and those UN conferences.

That heady combination also promoted critiques of existing ‘education’ that preserved the conservative status quo of education’s complicity in the emerging environmental crisis and its various injustices, but also to constructively advance the positive pursuit of environmental and social justices. At this time in Australia, such a reconstructive approach to curriculum was radical and innovative; as was the participatory action research process anticipated in the curriculum theory/model now being restored. To a young second-year graduate of the pre-Deakin undergraduate teacher education program, this invitation to pilot was too good to refuse, noting: (a) it offered me the freedom to *experiment* with *descriptive* approaches to curriculum design (rather than propositional and developmentally static versions that treated professional teachers as mere technicians) that were gaining ascendancy then, even in state-sanctioned curriculum; and (b) foreboding signs I felt about how schooling was stultifying most children and suffocating inventive and creative teachers.

I welcomed the opportunity. The environmental education curriculum theory was one only among a range of other issue-based curriculum areas, such as physical and health education, being pioneered by different curriculum research teams at the very progressive Deakin University. There was a real energy or ‘education revolution’ going on and which I could be part of. In addition, I appreciated, naively then, that this curriculum experiment emphasised strong connections between education development and research development.

The pilot environmental education curriculum framework and design for practice was largely a descriptive one, commensurate with the ‘empowerment’ and professionally developed ‘transformative’ politic of those progressive academic curriculum theorists at Deakin. The descriptive draft left a lot to my creativity within the opportunities and limits of the primary/elementary school in which I was employed. The lack of recipe-like advice about ‘teaching’ and ‘learning’, as they were then referred to, allowed me considerable discretion about how, when and where I might enact the curriculum theory and interpret its design — both environmentally and socially — according to the contexts of the class I was teaching and the lived circumstances and backgrounds of the children. Despite being a novice teacher, I already had a major pedagogical interest in taking the classroom outside into the experiential everyday of the children’s ordinary lives and interests. The curriculum theory allowed this. At this time, given my increasing worries about schooling, I was also experimenting with alternative imaginative ecopedagogies with the same cohort of children, through on-site, outdoor storytelling and experientially playful ‘gnome-tracking’ experiences and festivals (Payne, 2010a).

The 1978 piloting of environmental education was eventually offered to third-year undergraduate teacher education students at Deakin in the early 1980s (Castro et al., 1982a, 1982b). Finding published documentation about the Deakin initiative is difficult (but see Robotom et al., 1987, for key themes and issues), hence the ‘memory work’ methodology (Kaufman et al., 2001) of this restored, autoethnographic-like (Doerr, 2004) narrative that selectively emphasises the strongly democratic approach to curriculum theory, praxis and action for (being for) the environment (or, *ecobecoming*).

Clearly, the case described here is what experientially I know best. Its eventual curriculum packaging via Deakin University’s publication of Study Guides in the early 1980s (Castro et al., 1982a, 1982b) was part of the genesis of what later became known as the ‘socially critical’ approach to environmental education (and physical and health educations). More information is available about the socially-critical theorisation and history developed through the Deakin-Griffith Environmental Education Project (Fien,

1993a, 1993b; Gough, 1993; Robottom & Hart, 1993). It is that project that, in many respects, makes a significant contribution to the formalisation and development of critical and post-critical critical environmental education (Payne, 1995, 1999). Knowing curriculum history is vital!

The case study described below occurred within a 'lower' socio-economic setting of Australian life. The children were living on a geo-urban/coastal development fringe/edge, but still white/Anglo set of circumstances and historical/cultural conditions.

1978: Curriculum as Environmental Design for Social/Participatory Democracy; The Case

Initially, the Deakin model recommended that children be encouraged to think about 'changes' (physical, material, real – *author's note*) to their local environment (space) within a 2-kilometre distance (spatial proximity) from the school and/or home (bodily lived/experience, emplacement) that they had experienced (embodied) in the previous 12 months (time *durée*). Children also quizzed puzzled parents and chatted among themselves about recent changes. Thus, this curriculum theory 'delimitation' was very environmentally/geographically clear right from the start about the: (a) temporal and spatial parameters and existential socio-cultural *conditions* and their *limits* (again, let's call these ontological structures and 'invisible' material frames of the everyday realities they historically inhabited, or *dwelled* in) as anticipated in the theory. In this manner, the piloting of the curriculum theory aimed for: (b) meaningful and relevant open-ended inquiry, extended and extensive participatory processes and deliberations that were likely to unfold slowly over the time frame of subsequent inquiry (let's call these epistemological processes, or different ways of coming to know and become within that everyday socio-ecological ontology).

The pilot implementation of the curriculum model unfolded unevenly due to the structural constraints of classroom timetabling over a 6-month period in 1978, as well as schooling limits. Fear and anxiety about security and risk avoidance were just starting to fester in education and school policies. There was no rigid timetable for this 'sustained' inquiry. 'Unfolding' is used here quite deliberately. It refers to working within and against the normal confines of the school and classroom contexts, often spontaneously according to students' interests or the 'teachable moment', sometimes opportunistically according to the official demands of spelling, or mathematics, or science, or reading, or art 'time' — given the pedagogical importance of utilising and integrating excursions in the outdoor classroom and planning of some immediately relevant indoor curriculum/pedagogical opportunities. In this often 'unplanned' way, the notion and practice of 'experiential education' unfolded.

From a large list of children's subjective identifications of local changes that were mapped on the blackboard, six major changes were objectively prioritised by the class after much discussion and debate. Three of these changes were classified as 'good' and three as 'bad'. A day-long walking excursion to the six sites was arranged, as was an invitation sent (by me) to a representative of the organisation, or site/setting, of each good or bad change (where appropriate). Parents were invited to participate in the excursion/expedition. While walking a route I prepared (for expedience sake and compliance with school regulations), the on-site representative explained the reasons for the change as well as responded to questions children prepared in advance, or spontaneously posed in situ. As the group walked, talked, observed each site and listened to the various

site/setting representatives, various data were collected by the children and recorded on partially prepared 'work/walk' sheets.

Much of this raw 'experiential data' was used over the following weeks to slowly generate daily spelling lists and tasks, used in oral telling about issues they encountered, or 'tell a story' about things they sketched during the expedition. In summary, from working slowly and inductively with/in the (children's) embodied time-space parameters now reconstructed, following Dewey's logic for experiential education around environmental problem identification, deliberation and hypothetical resolution and reconstruction, each change in the environmental design of their lives was examined, often individually but always socio-ecologically, and carefully re-problematized within a shared democracy co-constructed in the civic life of the classroom and beyond. Children were always encouraged to discuss this 'project' with their parents, reiterating for a history of the present the current paucity of literature in environmental education research in Australia (and overseas) about 'intergenerational' student, classroom, school, parents, home and neighbourhood relations and learning, either from student and school to home (Ballantine, Fien, & Packer, 2001) or family, home to school and student and in-between (Payne, 2010b).

A 'hands-up' vote by the children on the most significant change to their neighbourhood was eventually undertaken — be it a good or bad change, or somewhere in-between or both. The children voted for a drainpipe that they observed emptied (allegedly, anecdotally) dirty water into a small local bay beach, as illustrated in the above opening extracts. On the first excursion to the six sites, where there was no speaker other than the 'voice' of the alleged dead fish and drainpipe, most children immediately concluded the water trickling out of the pipe was bad. Some children observed dead fish in the seaweed on the shore. Others regularly swam in the immediate area; some went fishing in boats on the bay. Apparently, dead fish were common. Andrew and Julie, for example, were now worried about the fish and chips they ate at home. The embodied 'connect' with 'nature' ingested was, subjectively (affectively, sensorially), 'material,' 'thingly' and objectively 'real'.

The understandable but educationally unacceptable judgment call/vote made by the children of 'bad' rested logically, intuitively, and deductively on 'seeing' a cause (dirty, smelly water in pipe) and effect (dead fish on water edge in small bay) relationship. Such 'naivete' worried me, as teacher, and required intervention. I questioned the consensus judgement of 'bad.' This worry of limiting 'learning' to raw experience only, indicated above in my 'teacher reflections', became a siren call for the remainder of my academic/practitioner career. There was, and still is, a reconstructive need for a more intelligent theorisation of experiential education (Dewey, 1938/1991), more so in the postmodern, a point I return to later. That practical theory is being described only so far with a more formal statement following later in this history of the present.

The young children's constructivist determination of a simple cause and effect logic about the pipe and dead fish was not educationally supportable or 'sustainable'. To reconstruct the problem at hand, following Dewey again, a second half-day walking expedition, again with parents invited, was organised to observe the problematic drainpipe site in more investigative detail, as well as collect more data that would provide needed 'evidence' for the inquiry. Many litres of allegedly bad water were collected from the drainpipe and carried back to school by the children as a further physical indicator of the 'material embodiment' of the subject/problem under investigation. On-site observations of fish in the water, and related presence of wildlife and possible sources of water pollution, also occurred.

Children were encouraged to ask their parents more questions about the drainpipe. Some children returned to the site in their own time.

Slow Ecopedagogy, Interdisciplinarity and Scientific Method

Upon return from each of the two excursions, an integrated or ‘infused’ curriculum slowly unfolded. This is now understood as inter/cross/trans and/or multidisciplinary teaching, learning or pedagogy within the broader ecopedagogies of experiential education. In this instance, that cross-disciplinary curriculum reflected the environmental design of the curriculum that via the walking expeditions stressed (children’s) *somaesthetic* (e.g., Johnson, 2007; Shusterman, 2008), *movement* (Sheets-Johnstone, 2009), *experiences* (Brown & Payne, 2009). Indeed, for restorying purposes, the once simple act of walking is, increasingly, a lost art (Nicholson, 2008) as, for example, ‘stranger danger’ bedevils children and parenting. Risk aversive and ‘adultcentric’ versions of ‘play’ (Payne, in press) are on the legalised rise of the fear of ‘insecurity’ — so ‘lost’ again is meaningful ‘learning’ achieved spontaneously, creatively and imaginatively through the movement experiences of walking (Gros, 2014) and children’s play, discovery, and experimentation, often in the outdoors. This methodological loss or absence of movement experiences in research is now being recovered through the *inter/cross/trans-disciplinary* role of the *flâneur* or, again for empirical insight, qualification and critique, the historicising of the ‘vagabond’ in the Australian outdoors, another slow ecopedagogical experiment and case (Payne, 2014).

Using the two expeditions/excursions as sources of children’s experiential data, *multidisciplinary* learning in, for example, ‘siloes’ literacy and numeracy occurred formally through the daily construction of spelling lists (of five or six keywords ‘lived’ while walking — for example, ‘gutter’, ‘drain’, ‘excursion’, ‘seaweed’), stories were written (about sites and their features, or representative speakers), walking distances and times estimated and calculated (school to site 1, then to site 2), and so on, where the various experiential data collected outdoors by the children were followed up ‘academically’ indoors in relevant curriculum areas. Hence, for the intelligent theory of experiential education called for by Dewey (1938/1991), non-binary ‘outdoor’ experiential learning and ‘indoor’ academic learning were ‘recycled’ carefully into each other. Here, the teacher’s role is important. As time went by and school and children’s classroom lives unfolded, the gaining of ‘science’ literacy, among other ‘literacies’ that cannot be exemplified here, emerged in response to the still unanswered question of the drain water being bad, or good.

Eight experiments were spontaneously or carefully devised by some, but not all, of the children researchers for ‘evidence’ now needed to reassess the ‘bad’ claim on the drain water. To be very clear, the children devised these experiments. My job was to create the pedagogical space in the official timetables of the conventional curriculum logic/practices expected in schooling. The children’s aim (encouraged by me, reiterating concern about the premature ‘bad’ democratic judgment) was to test the water collected from the drainpipe and check the hypothesis, or children’s ‘group think’, that it was bad and, consequently, a causal killer of the fish they had observed floating at the water’s edge. The experiments were conducted sequentially (for the most part, despite some teacher reorganisation) over an extended period of slow pedagogical and classroom curriculum time. Some experiments were integrated into normally timetabled science classes.

The eight experiments were:

- Observing, smelling and comparing two bottled samples of water; the drain water collected and tap water (inside classroom).

- Children's individual duplication of drain water (outside).
- Comparing drain water with dirty water replicated by the teacher (dirt only added to tap water). Comparison included allowing time for ingredients to sink. Examine, compare, and discuss observations of respective sediments (indoor).
- Examination of sediments of drain water after full evaporation occurring naturally in dishes (indoor).
- Monitoring, recording, and ongoing comparison of growth rates of two 'same' tomato seedlings fed respectively by drain and tap water each day over a 3-week period (indoor).
- Observing and comparing the behaviour (swimming and breathing) of a goldfish placed in a glass bowl of tap water then drain water (indoor).
- Filtering of drain water to determine if cleansing occurred.
- Disposing of the remaining drain water (outside).

Three only of these experiments are elaborated briefly so as to paint a richer *interdisciplinary* picture of the combined aesthetic, ethical and political potentials demonstrated in this case study. The goldfish experiment mentioned in Andrew and Marcelle's comments was very carefully conducted. It lasted only a few minutes. Most children were very bothered that the 'fish poisoning', as they understood it, occurred in their 'backyard'. One child brought a goldfish to school to see what would happen when it was placed in the drain water. Some lively discussion of an ethical type or moral reasoning/deliberation (or values clarification) occurred about this proposal. A class agreement was eventually reached. The goldfish would be placed for a short period only in each of the two types of water — drain (experimental variable) and tap (control standard). If the goldfish appeared stressed, children agreed it must be taken out immediately and put back into the water it was transported to school in. It was presumed the normal/standard tap water sample would be okay (although I later learned that even mild temperature fluctuations of fishtank water will kill a goldfish, much to the distress of my daughter!).

Feelings and empathy, bodies and emotions were well on display during the unpredictable goldfish experiment! Rationality/reason and affectivity/emotion were combined (for some), as somaesthetic 'meaning-making' and valuing were observationally and empirically 'combined' in this experiment, and others. Emotions were high in this very short experimental period of a few minutes (I wish I had sharper memories of this!). Notably, for this researcher and educator 30+ years later, 'learning' theory in education is just coming to grips with an important revolution elsewhere in 'scientific' research that deals with the intersections of cognitive science, phenomenology, emotion and linguistics (e.g., Gallagher, 2005). Of real interest is how each 'discipline' (of knowledge) interacts within the bodied sensorium of the (inter) active or intercorporeal beingness over time-space that, to push that still philosophical challenge (e.g., Lakoff & Johnson, 1999; Sanders, 1999), underpins the notion of experiential environmental education described above, and formalised below.

In terms of the educative democracy of ownership, engagement and participation, the children, invariably, also provided the needed material resources — human, physical, materials, and financial — for a number of the experiments. Various class members donated some of their pocket money to purchase tomato plants needed for a major experiment. Two same-size seedlings were bought from a local shop with the aim of 'feeding' drain water (variable) to one and tap water (control) to the other, over time and (classroom spacing!). The children wanted to see what happened to the seedlings in

what, eventually, methodologically approximated the scientific/experimental method of inquiry. Initially in this experiment, most children intuitively knew that each seedling should be fed the same amount of water and that the seedlings should be placed in the same position at a window where natural light and air were readily and equally available. Over the 3 weeks of this experiment, children made a number of incremental steps in refining the experimental procedures — the plants (things, bodies) needed to be rotated (spatially) each day (temporal), fed water at the same time (temporally), not overwatered, and that their measurements needed to extend from recording the overall height of the seedlings to counting and recording the number of fronds and leaves, observing and noting leaf size and colour, and checking for bugs and other signs of poor or good health. With some prompting from me, small groups of students took turns in methodically making and recording various measurements, changes, and any related observations they made on a large chart posted on the wall at the rear of the classroom.

Effectively, the children developed a rich data set, and experientially and experimentally discovered in the indoor and outdoor ‘laboratory-like’ settings some of the complex understandings and practices of the ‘scientific method’. They gradually appreciated the importance of waiting (patiently and slowly) to arrive at ‘valid’ conclusions about the drain water, based not only on charting the growth of the two seedlings, but how such findings about their growth and health related to what they had learned cumulatively from the other experiments. Clearly, the Minister of Conservation was impressed by this scientific ‘rigour’.

A third example of children’s creative experimentation: Towards the end of the 6-month period of the study, a decision had to be made about the large amount of ‘leftover’, now conclusively, ‘bad’ drain water. The summer vacation was fast approaching; ‘political’ action had already been taken through the writing of letters about their ‘findings’ to the local newspaper, ratepayers’ association, local council and to the local state member of parliament. The council wrote back saying that signs prohibiting the dumping of rubbish had been placed alongside the drains at the bay (at their exit). Mr Borthwick, the Minister, was still to announce his visit to the school (with the local member) following receipt of Marcelle’s letter.

A few children thought the remaining bad water should be poured into the school’s outside drinking water drains, or flushed down the toilets. The school’s toilets had already been identified as one of the ‘bad’ changes they experienced because of their smelly ‘rundown’ state. The school (toilet) was approximately 2 kilometres walking or bike riding distance of abstract space (underground pipes, infrastructure) from the drainpipe where they had earlier collected the water sample. Several others quickly reacted, pointing out that the leftover bad water would re-enter the bay via the drainpipe they had already investigated and, therefore, kill more fish. A collective ethical dilemma had to be confronted, again, on wastewater disposal, school toilets and even sinks and baths at home!

Democratic decisions and actions! The remaining bad drain water was placed in large trays on the roof of the school and allowed to evaporate in the approaching summer sun. The sediment was collected and mixed with dirt obtained from digging holes along the school boundary. At the same time, unknown to me, three of the class had formed a nature club for the school. Membership was five cents. The leaders recruited about 80 members from the school community and purchased a number of native Australian shrub and tree seedlings. Club members mixed the drain water sediment with ordinary soil from the holes they had already dug on the school boundary and then planted and watered in the seedlings.

Critical Environmental Education as Experiential Education

Above, I have *described* experiential education after highlighting its centrality to interdisciplinary environmental education practices, and research. This section briefly formalises those descriptions. Experiential education has not attracted the pedagogical and curriculum research it warrants.

Children's experiences of education present great challenges to research (Payne, in press). A great deal of educational research focuses reductively on children's formal learning, cognitive development and 'outcomes'. The slow processes of education and the processual means of becoming educated get 'lost', as does examination of the material conditions of education. The rich complexity of *experience*, as difficult as that term is, is a distraction for an education system that is preoccupied with the testing and measurement of predetermined outcomes, milestones, and rankings: education of the mind, or 'neck up' only. Experiential education processes and their curriculum and pedagogical conditions, figurations and structurations require demystification and clarification, even if only broadly conceived in this section in light of what has been described in more detail above.

Experiential *learning* through actively *moving* and interactively, or 'intercorporeally' *doing* in the 'field', like the excursions/expeditions described in this case study, is not well understood by educators and researchers. It is only ever thinly theorised against other fashionable 'intellectual breezes' in education, following Dewey (1938/1991) and researched in a surface-like manner so far in environmental education that continues to privilege epistemology (e.g., teaching, learning, constructivism, knowledge) and relevant methodologies or methods (anthropocentric) while deprivileging the ontological and ecological basis of both epistemology and methodology. As already indicated, the ecological ontology of the environmental design of curriculum and ecopedagogy requires 'surfacing' for learners, teachers, and researchers.

The links between outdoor/field *experiential learning* and indoor 'academic' classroom learning uses the experiential 'seed' as an embodied means and enplaced medium capable of watering, sprouting, and generating in the classroom the otherwise rhetorically claimed interdisciplinary approaches to formal education. That unfolding theoretical/academic interdisciplinarity 'feeds back' into, for example, excursion 2 and the 'academic' work it too generates. This mutually constitutive and recyclical intercorporeal process that combines indoor and outdoor, mind and body, experiencing and learning, theory and practice, I/we and lifeworlds/neighbourhoods (and various other dualisms hampering educational 'growth') have not been pedagogically/practically developed or sufficiently theorised as curriculum praxis, and researched socio-ecologically in ways that give genuine life and vitality to the animated notions and practices of *experiential education* (EE).

History of the present! My above 1978 teacher reflections highlight this nascent realisation that over time (and academic space) persist as a formidable task in progressively improving education and engaging 'learners' such as the already alienated and allegedly underperforming Andrews of the world of schooling. The recyclical, recursive, or mutually constitutive nature of experiential learning programs (ELP) and academic learning programs (ALP) or outdoor/urban field and indoor/class experiences over (children's) lived time and space is, hopefully well described here in this curriculum/pedagogical case, and elsewhere (Payne, 1998/2014), as well as in a reconfigured 'post-phenomenological' and post-critical approach to environmental education research (e.g., Payne, 2003b). If not, the simple illustration of $ELP + ALP = EE$ spiralling/recyclical dynamic through bodies over slowly contextualised time-space helps represent this challenge. Experiential education warrants far more theoretical and

empirical development (and evidence) beyond this all-too-brief explanation of a 'history of the present/future' (e.g., Payne, 1999b, 1998/2014).

Theorising and Researching Slow and Fast Bodies~Time~Space in Critical Curriculum Praxis

A main aim of bringing to life this old case study is to revitalise critical curriculum theory and pedagogy in critical, experiential environmental education and its research. The Deakin innovation in curriculum and pedagogy has, more or less, been 're'placed dromospherically by disembodied, decontextualised, displaced and abstracted modes of textual and virtual/cyber/digital education.

This restorying of a history also represents the need for a new 'language' for EE (Le Grange, 2013) and 'imaginaries'. I partially agree with this tactic in environmental education but remain practically/materially cautious, given, for example, the vulnerability of language games and alleged reimaginings to being (re)colonised by the imperatives of various neo-liberalisms. For example, arguably, the recent populism and often uncritical acceptance and techno-global 'development' of education for sustainable development (ESD; e.g., Payne, 2003a; Jickling & Wals, 2008, and the well-documented 15-year long critique of ESD). In the wake of allegedly modern terms, such as *empowerment*, *critique*, *praxis*, *agency*, *action* and so on, the verdict is out on to what extent postmodern terms now commonly used in environmental education, such as *connections*, *conversations*, *networks*, *flows*, *imaginings* and so on, advance or extend the theoretical and empirical development, value, and efficacy of the 'change' imperative around which the field itself was developed in the 1970s. The evidence is not in, and the juries have not yet been thought of. More broadly, in 'high theory', contemporary critical theorists are now lamenting the demise of the 'critical' and, in some instances, its tactical but not strategic contribution to the 'acceleration' of capitalism (e.g., Noys, 2014). Post post-structuralism is now well underway, particularly in feminist and new materialisms discourses (e.g., Barad, 2005; Bennett, 2001; Coole & Frost, 2010; Grosz, 1999, 2004).

Theoretical, praxical and methodological pockets of resistance in environmental education persist, as well as in post-critical inquiry and curriculum research (Hart, 2005; Lotz-Sisitka et al., 2013). Here, slow time emplaced spatially in an embodied ecopedagogy anticipated in a critically democratic curriculum theory (and educational research) is, therefore, a central ontological~epistemological~methodological theme of this restored post-critical materialist case study. In this particular instance, the eco-somaesthetics~environmental ethics~ecopolitics of environmental education practices are strongly emphasised. ~tildes are used to signify (to educators and researchers) the immediately preceding non-dualist intercorporeality, mutually constitutive 'natures' and agential relations as an 'ecology of things' for pedagogical, curriculum and research deliberation and development (see also Payne, in press, for potential applications in early intervention, early years education pedagogy, curriculum and research).

Normatively, democratically inspired everyday 'cultural' parallels that materially and actively/praxically support this slow ecopedagogy can be found in the 'slow food' movement (Petrini, 2001, 2003) — a practice of 'eating' and food politics generated in Italy in the early 1980s as a form of cultural resistance to the 'McDonaldisation' of the accelerating everyday (Ritzer, 1993). A potentially great practice for environmental education in the confines of schools and homes? (Green, 2013). Then local, this organic/local slow movement is now global (Murdoch, 2006), as is the 'slow travel' (Dickinson & Lumsdon, 2010) and 'vagabonding' (Potts, 2003) movements in tourism. Time — in particular, slow time — exemplified in this particular case, but re-thematised in school garden pedagogies (Green, 2013) and environmental/outdoor vagabonding (Payne, 2014) is

therefore a vital link missing so far for curriculum theorists in fostering the pedagogical resistance to the mainstream of education foreshadowed by many in environmental education in the late 1970s and 1980s. But never then was ‘time’ theorised adequately then within that critical discourse of environmental education.

For the post-critical and history of the present/future curriculum purposes alluded to above, Huebner (1967/1987) was influential in the formulation of the *currere* movement in education — a development in the philosophy of education that significantly shaped curriculum theory and drew inspiration from the field of phenomenology (hence learners’ lived experience of their everyday lifeworlds, as demonstrated throughout this study). Huebner’s classic contribution focused most sharply on the question of ‘curriculum as environmental design’. Like Troutner’s (1974) classic insights into children’s phenomenology of temporality in education, Huebner presciently stressed the temporality of education, glimpsed partially in the stories of Andrew, Julie and Marcelle. Effectively, Huebner demanded a response in curriculum theory to the question rarely asked now in the dromospherical fast of schooling and universities of how we might conceive of children’s intergenerational experience in learning:

The responsibility of the curriculum person, then, is to design and criticize specialized environments which embody the dialectical relationships valued in a given society. These are environments expressing concern for the temporality or historicity of man (sic) and society. These environments must encourage the moment of vision, when the past and future are the horizons of the individual’s present so that his (sic) own potentiality for being is grasped. Education is a manifestation of the historical process, meshing the unfolding biography of the individual with the unfolding history of his (sic) society. Huebner (1967/1987, p. 329)

Here, 50 years later in the dromospherical Anthropocene, the preceding case description might be understood as a ‘moment of vision’, but that ‘imagination’, it must be said, occurred in the relative slowness of Huebner’s times. This 1978 curriculum/environmental design flowed over a 6-month period of time, an essential condition (for students’ environmental learning and, therefore, the way and manner we think about ‘teaching’ in an interdisciplinary way, as demonstrated) or approach to temporality enabling an education in ‘place’.

Moments of vision, reimagination, and now critical, material experimentation! ‘Democratic activism’ is called for in Connolly’s (2013) *The Fragility of Things*, where the now overdue episodic and self-organising ‘role experimentation’ he describes ecologically is, hopefully, illustrated in this case. Connolly is acutely concerned about the Anthropocene and pleads for the experimentation with democracy, as did Dewey (1938/1991), Counts (1932) and other educational ‘progressives’ at the turn of the 20th century (well before Giroux, Bernstein, Greene, Kemmis et al.). Following Huebner, the dialectical consideration of time–space–place, we must note, is absent from most accounts of student *environmental* learning and place pedagogies. What, subsequently, is of utmost importance in this case study for curriculum theory is how experiential education in postmodern schooling must strongly accommodate the onto~epistemic *relationality* and mobile hybridities of the learners’ bodies and their emplacements over repeated or frequent times spent slowly in those ‘learning’ situations and contexts. In the mobile, fluid, liquid spaces of postmodernity these increasingly virtual ‘spaces’ remain (partially) historical, cultural, and ecological markers of faster times rapidly unfolding in the lives and backyards of the child (or adult) learner (e.g., Nakagawa &

Payne, 2015). This difficult mandate to pay stronger attention to the environmental design of curriculum theory is unpacked a little more below.

Curriculum Theorising; Environmental Design, Experiential Education and Democracies of Aesthetics, Ethics and Politics

This history emphasises the powerful connections between the environmental design of curriculum, the embodied and emplacing roles of experiential education, and their uniquely combined potential for democratically enabling agencies and experimentally enacting action. Fertile ground exists for pedagogical, theoretical and methodological intervention, critique and development.

Undoubtedly it is much harder to make the case now. Compelling *resistance* theory and persuasive evidence are required. New curriculum pedagogical and research problems and questions need to be formulated. Experimentation is vital. Restorying and histories of the present can contribute to the otherwise lack of persuasive or compelling argument and evidence. More histories of the present of the critical and material type recommended here are also needed.

Indeed, given the mainly conceptual/textual/discursive criticisms and deconstructions of critical environmental education, central to this old design of critical curriculum and pedagogy, was the *multilayered democracy* 'practised'. That democracy of children's participation has been explained. The democracy enacted spread much further. 'Democracies' of bodily movement occurred in a range of outdoor and indoor environments that socially and environmentally engaged children in an inter/transdisciplinary *democracy/ecology of meaning-making and knowledge generation* across the siloes of literacy, numeracy, artistic and scientific experience and learning, at least. The ecologically embodied and 'affectively' oriented meaning-making dimensions of experience culminated 'rationally', via an integrated and infused curriculum, in formal learning, understanding of a socio-ecological environment, a heightened sense of cooperative citizenship, local pride and responsibility, culminating in civic action. These children democratically made a difference, as the Minister of Conservation duly acknowledged.

The idea, and ideal, of democracy therefore demands even closer scrutiny as to how it is conceived and conceptualised, and enacted and practised. For deconstructionist theorists, the environmentally designed curriculum praxis cased above reconstructively helped dissolve mind-body dualisms, I/self-we-world dualistic thinking, values hierarchies and contradictory purposes and practices of education that, historically, have undermined progress on the still compelling quest for learners' ethico-political action-competence and ecopolitical literacy. An aside. Many well-intentioned environmental education educators and researchers resolutely pursue rational understandings and pedagogical holy grails under the misguided linking of 'right' knowledge provision, attitudinal change and instrumentalisation of pre-programmed 'pro-environmental behaviours'. Here is where 'democracy' in education unfortunately turns on itself.

In this alternate progressive and critical reconstructive approach to (eco)praxis the *designs* of educative experience and creating their conditions cannot be stressed enough. Traditional curriculum/pedagogical designs of education were deconstructed and reconstructed, within certain limits. I have assertively highlighted the remaking of educational conditions that enabled a serious multi-layered democratic alternative to the still prevalent linear, instrumental, applied science and behaviourist prescriptions (and evaluations) of allegedly pro-environmental pedagogies and teachers' competencies, often limited to notions of, for example, 'pedagogical content knowledge' or a series of performatively measured outcomes. That conventional logic (or ideology, or discourse)

visibly and invisibly dominates and governs/disciplines the ‘postmodern’ discourse of environmental education, despite the longstanding ‘modern’ view from the 1970s that, for many of us, committed environmental education to being an ideological, knowledge, and historical-materialist critique of the dominant logic and mainstream practices of education.

Post the 1970s formalisation of environmental education, the persistent question of ‘agency’ attributed reductively to learners’ individual and collective learning (Stevenson & Dillon, 2010) will not go away if there is to be some serious matching up of the field’s historic purposes, de/reconstructive means and ‘ends-in-view’. That is not to say that the purposes and goals of environmental education should, or can, remain the same as bodies/things in time–space globally roll on. That question about the future of environmental education and its research, however, demands that the conditions and structures of education, be examined first to enable the sort of affectively oriented meaning-making and cognitive learning imagined in environmental education. Otherwise, a paralysis persists in reductive views of learning, as Huebner (1967/1987) anticipated. Further work in curriculum theory and research on the question of learners’ (be it children, or teenager, or Gen Y or adult) ‘agency’ and time–space structurations of it within their historically lived and emplaced *positionings, circumstances, conditions*, and *structurations* of environmental education still beckons (e.g., Simms, 2008; Duhn, 2014).

In regard to this history of the present and what curriculum theorists might learn from this old descriptive case study, a challenge for post-critical theory~praxis lies in how that theory conceives in advance, and dynamically in-process, the conditions, structurations, and contexts of the learners’ meaningful experiences, multi-layered democratic participation and engagement in citizen/civic responsibilities. How might a curriculum, its ‘environmental design’ and ‘moments of vision’ *ecologically* foster understandings of those enabling *conditions* through the appropriate use of more-than-adequate ecopedagogies? How can environmental designs and moments in their times pay *inter/transdisciplinary* attention to, and insight about, while inviting spontaneity of the moving of active, playful, discovering, but techno-mediated bodies in proximally immediate and remnant slow time–space environments? And, if a de-paralysis is needed or desired, foster an emergent or real experimental sense of *agency* and *actancy* with the capacities for making a difference within a shared, participatory, inclusive, and democratic framework? This conditions-based and everyday circumstance-driven ecology of a post-critical curriculum theory, including its democratic sensitivities and sensibilities emplaced in praxis, is a very different educational platform and horizon/imaginary for environmental education. Its vital, material activisms distance themselves from the use of conventionally doctrinaire pedagogies and/or behavioural models and texted impositions.

This challenge is not difficult if we use the 1978 restorying as a history of the present/future ‘model’ demanding recontextualisation and reimagination. Put simply and practically for the next wave of critical curriculum activists, theorists and practitioners, many of the limits on critical environmental experiential education can be overcome:

- Most (global, national, local) environmental problems and social issues are materially/corporeally ‘felt’ and lived in the researched/researcher body as the primary ecopedagogical site ‘in here, somewhere, in us’ of and for inquiry, critique and praxis. ‘Out there, somewhere’ exists in here.
- These ‘affected’ bodies exist in the classroom, at home, in the playground, in the schoolyard, and neighbourhood. Bodies, even young ones, are both residues/sediments and sources/generations of the ecologically problematic self,

society and human condition. Climate destabilisation occurs in the schoolyard; there is no reason to exit the school 'out there', which only serves to usher in so much pedagogical, timetable, legal, and costs 'blowback' from colleagues, school leaders, parents, and so on.

- The greatest impediment to critical experiential environmental education is the lack of creativity and imagination we remain materially and symbolically trapped in, or conceptually governed by. Inventive surpassing of the constraints and limits of education is needed, particularly in early years education where the potential for experiential/play cross and interdisciplinary study has not been totally eliminated. The positive body of knowledge about the vital values/benefits of 'play' will buttress its erosion.

To assist, elsewhere I have 'updated' the 'old' to a newer postmodern critical curriculum, evidence-based practical theory for ecopedagogical action. Its roots are found in this case. Like the descriptive opportunity presented to this young teacher in 1978, this postmodern theory poses nine pretty simple questions that the progressive educator can experiment with at different levels of education (e.g., Payne, 1995, 1997, 1999a, 2006).

A snapshot caution and autoethnographic counterpoint is also needed about the struggle and theoretical and empirical challenges for critical ecopedagogical development, curriculum theory and research development! Thirty years+ after the case described above, in the postmodern corporate university, it is very apparent that academic freedom and professional autonomy, expertise, and experience are under neoliberal and technocratic siege. I now 'deliver' online to unseen and unknown but (high) fee paying customers a 'subject' in which they enrolled in a very 'fast' and 'flexible' semester-long subject disingenuously named (and branded/ marketed internationally) as 'Deepening education and sustainability'. A 'blended' technopedagogy is governed instrumentally by faculty managers and coercively requires its deliverers, like me, to use Powerpoint with voice, video, Moodle chat, Moodle Feedback tool and Webinar for 'synchronous activity'. Neoliberal sustainababble? This cyber/digitally upload/download 'pedagogical practice' grounding/materialising the abstracted online curriculum globally positions non-present and invisible chatterers in their alleged 'rooms'. I have no idea of what these 30 students 'learned' over the 3 months of this online effort, but they all passed the 'subject'. This cyber (time-space) digitalised design of techno-electronically mediated programmed learning is rhetorically claimed by those managers to not pressure staff. Yet, conforming with it is needed by the university managers/sustainers of federal government neo-liberalisms to 'improve' student evaluation outcomes, faculty performance, and university rankings. Auditing of our techno-cloning efforts is heavily surveilled for future policing efforts (e.g., Apple, 2005). Excursions, field trips, and other forms of experiential learning and education are not listed or encouraged in this allegedly flexible, blended 'mode'; a far cry from the descriptive Deakin model informing the environmental design and praxis/action highlighted in this case study and history. Decontextualised time and space, and perhaps disembodied bodies in the 'non' and 'un' place future of 'education' challenge yet again. Critiques of this *digital colonisation of imagined spaces* in neoliberal efforts to clone education are needed to conceptually and theoretically reconstruct this intergenerational-global problem (Payne, 2010b, 2010c).

This autoethnographic caution extends elsewhere, pointing again, to the urgency of de- and reconstructive critical curriculum theory/praxis. There can be no doubt that the once public university has, more or less, been privatised over the past 30 years. Now, the 'privatisation' of public primary and secondary schools in Australia is openly

mooted. Depressing stuff! At the same time, ironically, Pope Francis' second encyclical *Laudato Sili (Be Praised)* in his 'integral ecology' mirrors many of the concerns of critical environmental education identified in the 1970s series of UN conferences. His old language is also (re)embraced in restorying this history of the present. Remarkably, this theological 'turn' provides much needed 'prophetic' support for those scientists and others who have advocated strong action on, for example, the need for global and national responses to climate destabilisation.

It is extremely difficult to make sense of this current flux in curriculum histories, critical purposes of the field, critique of education's complicity, sciences of climate change and destabilisation, toxification of oceans and lands, decarbonisation of the air, theological interventions, the demise of democracy, the polarisation of wealth, and so on. The challenges for environmental education theorising and restorying are immense. Indeed, 80% of Australian teachers are either unaware of the increasingly popularist notion of Education for Sustainability, or do not understand what it is (Australian Education for Sustainability Alliance, 2014).

Curriculum history, presented as a history of the present, is valuable and useful in reclaiming, as well as reimagining, some of the 'founding' principles of environmental education in the 1970s. The restoration of critical curriculum theory/praxis is urgently needed in the dromospherical Anthropocene and its ecologically problematic human and social condition.

Some Post-Critical Comments on Research

There is one thing in environmental education research we can be reasonably confident and competent enough to tackle. The questions, challenges and struggles for curriculum and pedagogical reform broadly outlined above cannot be seen outside how they are also conceptually, theoretically and methodologically *framed* in and by research. The 'movement' to post-critical research in environmental education over the past decade is indicative of how the past (or passed) understandings of genres of inquiry can, and need to be re-vitalised and re-enlivened (e.g., Hart, 2005, 2013). At the risk of oversimplifying the term *post-critical*, its use incorporates aspects of critical theory, poststructural theory and phenomenological disposition or orientation, perhaps methodology, as they are informed by, for example, concerns about technologisation, socio-economic, gender, ethnicity, indigenous/colonial, land/sea, animal, and 'other' issues, notwithstanding tensions that exist both in and between each of those 'namings'. That hybrid complexity of the post-critical is now exacerbated further by a number of turns in theory and philosophy that have helped restory this 'old' case study.

One historical constant in this contemporary theoretical flux is the challenge for researchers to come to terms with the assumptions and explanations their research framing invokes, invites or offers about the ontology~epistemology~methodology relationship, as well as how that triad is conceptualised/theorised, represented and legitimised in the research process and its 'product'. The above case study description and discussion hopefully makes much clearer, in practical terms with limited theoretical explanation, the connections between: (1) those ontological presuppositions made in the curriculum's environmental design about, in this instance, young learners and their everyday lives and neighbourhood circumstances; and (2) their circumstantially lived, socially contextualised and geo-cultural-epistemological embeddedness or rootedness in the environmental design of the everyday fabric of that lived experience; and (3) some of the educative body-time-space relations whose environmental *and* social *and* cultural *and* ecological designs unevenly underpin questions of what enables and constrains engagement, learning, culture and agency.

Coping with these ontological–epistemological and temporal–historical changes is complicated further by intergenerational issues in the home with its new patterns of dwelling/inhabiting that remain under-researched if we are to consider seriously, for example, how family–school relations might promote sustainability relevant to the purposes of environmental education (Payne, 2010b). And, for the curriculum theorist and researcher, such rapid personal, social, family and ‘local’ change is further confused by the broader impact of globalisation on ‘older’ variations in regional and local histories and cultural contexts (e.g., Jickling & Wals, 2008; Lotz-Sisitka, 2010) in which younger people live.

To the budding teachers, or new and old researchers, we might conclude this history of the present case restorying by posing the tough post-critical questions of: ‘How do we understand ontology and epistemology in relation to curriculum theory and pedagogical enactment? What presuppositions or assumptions do we make in postmodernity about how children live, dwell and become, and make relational and ideological meaning of selves, others and environment? Are children centred agents? Or have they become so decentred that the ‘subject’ no longer exists? There are many more questions here, but post-critical inquiry will quest for a degree of coherence in the triads of (1) ontology, epistemology and methodology whose (2) socio-ecological intersections with a somaesthetics, ethics and politics of environmental designs should not separate off each element of the respective but interrelated triads.

The above three dot points for such a postmodern practice of critical environmental education praxis (and research) do accommodate the challenges and cautionary difficulties just outlined. Now, back to the future for critical environmental education?

A Not So Final Comment?

A letter to Marcelle from the Office of the Minister of Conservation:

As I again read your letter, it is my wish that all young Australians show an understanding and concern for things about them as you do ...

Extract from Mr Borthwick’s official correspondence, January 22, 1979. (Castro et al., 1982b, p. 158)

Endnotes

- ¹ The recent act of the naming of the Anthropocene (Crutzen, 2002) serves as yet another symbolic (but real and material) global ‘marker’ or sign of that which concerns environmentalists. The Anthropocene (informally at this stage) defines the geological epoch (following the 11,700 year-long Holocene before the present) in which human activity is acknowledged as having a significant impact on the earth’s ecosystems (Steffen, Grinevald, Crutzen, & McNeill, 2011). The time of the onset of the Anthropocene is debated, some claiming it commenced with the advent of the Industrial Revolution in the 18th century; others post-World War 2 as many nation states industrialised their economies. Anthropogenic global warming and its contribution to climate disruption is only one among numerous ‘environmental’ problems confronting the collective being of things, including desertification of lands, toxification of oceans, chemicalisation of air, water, soil; loss of biodiversity and increase in species extinctions and endangerments (Christoff & Eckersley, 2013).
- ² Virilio’s (1977/2006) studies of speed investigated the manipulation and material control of ‘speed’ to win wars. His ‘dromosphere’ focuses on the imploding modern and postmodern worlds of the accelerating ‘race against time’ as it is embodied in the now

'naturalised' and normalised 'fast' of daily living in 'first' world nations. *Dromology* is the study of speed and how the technologically driven acceleration of time objectified, as a 'race,' changes the nature of 'things', including its *beings*, both animate and inanimate.

- ³ Shaviro (2014) bravely concludes that (speculative) aesthetics is now 'first philosophy'. In simple, material and practical terms, the incorporation of aesthetics, or somaesthetics, or ecosomaesthetics and environmental aesthetics/preferences will be welcomed by creative experiential environmental education researchers who include the 'slowly' moving, sensing body in 'nature' as a preferred curriculum and pedagogical spatio-temporal 'site/setting' of education where environments and natures are sensed and perceived affectively, not rationally.
- ⁴ Word/space limits preclude any explanation of the connection of the practical case study reported below and the abstraction of high theory outlined above. Some links will be offered because they shed conceptual and empirical light on a number of issues that have vexed the critical discourse of environmental education and its research over the past 20 years; for example, persistent *material* concern about the field's *critical/praxical* progress (Robottom, 1984/2014, 1987) and the accompanying neoliberalisation of education pathways to sustainability (Huckle, 2014). In restorying this 'old' curriculum case of a 'fishy problem', I hope to clarify some misunderstandings in the philosophically liberal *anthropocentric* critique of the socially critical education for the environment (e.g., Jickling & Spork, 1998), as well as make clear in that social theory of curriculum how *agencies* enabled in the humanly constructive variation of an education for being for the environment enabled children to conduct many *creative* experiments on *things* whose 'significance' (Tanner, 1980) and 'insignificance' (Payne, 1999b) to their *bodied* experiences of ontologically proximal *time-space* was central to the *non-anthropocentric* 'environmental design' (Huebner, 1967/1987) of the *otherwise anthropocentric* curriculum theory cased here. Cutter-Mackenzie's (2014; see also Barrett & Barrett-Hacking, 2008) frustration about the *absence* of children in environmental education research is remedied here, noting in this historicised case that children indeed were the active researchers themselves about the *things* in their lives they encountered socially and ecologically through their bodied experiences. Moreover, in *presencing* children so strongly, this restorying emphasises some of the *affectivity* in children's 'voices' about the *spatio-temporality* of *feeling*, where the unresolvable problematic of *non-representation* is a basic interest of high theory (e.g., Thrift, 2008; see also Payne, 2005). Children's 'action competence' (Jensen & Schnack, 1997) should be self-evident to the reader. If so, the *reality* that texts/language can ever only partially *correspond* to or *correlate* with, but is restored here, hopefully provide for a *post/eco phenomenological de- and reconstruction* of the embodied experiences of nature-culture relations in slow environmental education practices and research (Payne, 2003a, 2003b, 2005b, 2005c, 2013; Payne & Wattchow, 2009).

Keywords: curriculum history, environmental design, experiential education, post-critical inquiry

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