What Weston's Spider and My Shorebirds Might Mean for Bateson's Mind: Some Educational Wanderings in Interspecies Curricula

Ramsey Affifi, University of Toronto, Canada

Abstract

Education has institutionalized a process that reifies cultures, ecological communities, and ultimately evolution itself. This enclosure has lessened our sensitivity to the pedagogical (eteragogical) nature of our lived relations with other people and with other living beings. By acknowledging that learning and teaching go on between species, humans can regain an eteragogical sense of the interspecies curricula within which they exist. This article explores interspecies lived curricula through a selection of ideas from ecopragmatist Anthony Weston, and cybernetician Gregory Bateson, and through lived experiences with shorebirds of Lake Ontario. Some gulls and a tern teach the author to enrich and diversify, rather than constrict, the potentiality of life. In so doing, being ecological and being educative become unified concepts.

Résumé

L'éducation a institutionnalisé un processus qui a matérialisé des cultures, des communautés écologiques et, finalement, l'évolution elle-même. Cette enceinte a diminué la sensibilité de la nature pédagogique de nos relations vécues avec d'autres personnes et d'autres êtres vivants. En reconnaissant que l'apprentissage et l'enseignement se produisent entre les espèces, les humains peuvent retrouver un sentiment naturopédagogique dans le cadre des rapports entre espèces au sein desquels ils existent. Le présent article examine les cadres inter-espèces en se penchant sur une sélection d'idées de l'écopragmatiste Anthony Weston et du cybernéticien Gregory Bateson, et sur des expériences vécues auprès d'oiseaux de rivage du lac Ontario. Quelques mouettes et une sterne enseignement à l'auteur à enrichir et à diversifier plutôt qu'à restreindre le potentiel des êtres vivants en cause. Ce faisant, les méthodes écologique et éducative deviennent des concepts unifiés.

Keywords: interspecies curricula, eteragogy, Gregory Bateson, self-validation, curricula vitae

A Gull One Morning

I settle down on a picnic bench close by a swaying willow near the shore of Lake Ontario. The sun is only just beginning to trace its arc across the peaceful summer waters. I close my eyes to listen more clearly to the different sounds around me. As my ears become accustomed to the soundscape, a dialogue between the gulls to my left drifts into my attention. Their beautiful, haunting calls often stir emotions that connect me to my childhood. But today, their speech unhinges from this association and takes on new meaning. I feel them acutely as voices, uttered not for my nostalgic soul, but for the demands that they themselves have to communicate. The longer I listen, the more certain it seems to me that this conversation is not merely mechanical, nor dismissible as merely instinctual, but is driven by felt need and satisfied through encounter. A gull calls out to another, affirming both the existence and importance of a being other than him or herself, and the need for relationship. Everywhere around me, beings are calling out for connection, for curiosity, for relationship.

I open my eyes. The colours are brighter and warmer and the atmosphere feels calm. On my right, a gull bobbles up, his bright white chest framed by his smooth grey wings. He cocks his head and points his eye directly at my face. I angle my sight towards him. He jumps a few steps back. I turn my head away and glimpse out at the lake. He inches back towards me.

Some people consider gulls to be food-grubbing pests made dependent on us by our propensity to feed them. But I wonder: were I simply a "food dispenser" to him, would he so desire to approach me as I sat motionless, with my eyes closed? Wouldn't I be more likely to feed him had I been holding a bag of bread, perhaps eating some potato chips, or, at the very least, having my eyes open? Couldn't it be that the very peculiarity of my action, its unexpectedness from the gull's point of view of what humans usually do, is an intriguing call for him to approach me? And how does allowing or discounting this possibility impact our relationship?

Hidden Curricula in Schools

Many scholars have pointed to the pedagogically significant, unarticulated contextual dimension of school programming, sometimes called the "hidden curriculum" (Eisner, 1994; Jackson, 1968; Snyder, 1971). This term is often used to highlight aspects of school, textbook, or teaching practices that either consciously or unwittingly serve the economic and political structures of the powerful elite. Neoliberalism may impose its contextual messages upon curricular content (Apple, 1975; Giroux, 2001), but other racial, gendered (Margolis & Romero, 1998), and technological impositions (McLuhan, 1964) are similarly contributing to what is a multi-layered matrix of meanings. However, the hidden curriculum is not *solely* established by hegemonic forces because these contextual elements still need to be interpreted by those experiencing them, be they teachers, students, or others (Sambell & McDowell, 1998). The term "hidden

curricula" emphasizes that there is unlikely to be a single, or even a finite and articulable set of "lessons" that can be excavated from the implicit contexts of educators' messages.

Despite advances in understanding, revealing, and attending to social aspects of hidden curricula in classrooms (see, for example, Bowles & Gintis, 1976; Everhart, 1983; Willis, 1977), scrutiny of the relations that schools normalize with other living beings is only more recently being explored. Analyses of the hidden curricula of human-animal relations in schools (such as discussion of animal dissection (Oakley, 2009), or the anthropocentrism inherent in schools' almost exclusive use of computers and books (Bell, 1997)), are exciting developments in our struggle to wrestle culture from morally and ontologically naive human-centeredness. Many scholars link patterns of dominance promoting anthropocentrism to the same sources that reify racism, sexism, and classism (Bell & Russell, 2000; Kahn 2002, 2008; Selby, 1995). Humane education and ecopedagogy seek to rewrite curricula on multiple levels, from the explicit content of lesson plans to implicit lessons learned from the cafeteria all the way to the school bus.

In the spirit of Indigenous People worldwide, scholars such as Fawcett (2000), McKay (2000), Oliver (1992), Dillard (1988), Abram (1996), Evernden (1985), Bell and Russell (2000), and countless ethologists, poets, and lovers of the world's myriad subjectivities, I will advance the concept of hidden curricula along a slightly different, yet complementary, line. As long as we consider the human/more-than-human relationship an issue to be addressed *in* our schools and *for* our students, the dualism between humans and other living beings is left intact. Education for humans still has hidden messages, one of which surely is that education is *for* humans. To address the relationship between humans and other living beings completely, we must recognize that even the classroom is a learning space co-constituted by a larger field of relations. Opening to the notion that we continuously teach and learn from an audience of other living beings alters the way we interact with, see, understand, and relate with them. This has important educational and ecological implications, and I hope to show how they might be tied.

Teachers are often being watched by living beings who may be paying much greater attention to them than their intended human students. Through his description of a classroom activity he sometimes engages in, Weston (2004) invites us to consider how a spider in a schoolroom is aware of us. He writes evocatively: my imagination whirls as I experience flashes of what it could mean to be me *as* observed by a spider. I feel a distinct sense that the spider's being opens up a meaning or a previously unseen dimension into the space of the room. It is a startling experience because I have been trained to not consider it. I have scientifically or philosophically regarded the spider's perspective as "inaccessible," leading me to not reflect on it at all. This has led me to act as though the spider's perspective doesn't even exist. Nevertheless, the spider's presence is important,

and our relationship with her is educational not only for our human students, nor only for ourselves, but also for the spider herself. I must dedicate myself to exploring these dimly lit spaces and not let my epistemological frameworks lead my imagination to retreat (Armbruster, 1998) from the challenge. From her corner, the spider watches and interprets the space of the room along her own lines, birthing a parallel universe within which we play a part. Our very ignorance of her company is *a part* of this part we play; were we conscious of the spider's presence or blithely unaware, our actions would differ, and would also be learned differently by this attentive watcher. A classroom is rarely, if ever, a uniquely human learning space, and part of de-anthropocentrizing the discipline of education is recognizing this.

Curricula Vitae[1]

The institutionalization of education enforces the cultural belief that education primarily or perhaps only occurs in recognized educational settings, such as a school, a training centre, or some other designated area. This separation has led modern culture to overemphasize the importance of schooling while devaluing the significance of out-of-school education. Education is more holistically integrated into traditional societies, where apprenticeship (of both skills and attitudes) is a part of daily life (Lave & Wenger, 1991). Traditional societies reflect an awareness in practice of a cultural view that educators, following a line of thinkers after Dewey, have come to appreciate. Dewey (1916) recognized that humans learn more and teach more in their daily lives than they do in schools, and it is in these ways that cultures perpetuate themselves. The various ways living beings teach and learn from those around them through living their lives can be thought of as lived curricula or, literally, a *curricula vitae*.

The school diverts people's attention from their curricula vitae by bifurcating experience into two domains: that where education occurs and that where it doesn't (Illich, 2000). As humans become less attuned to the educational dimension of their out-of-school lives, they hardly see that it is in these daily ways that they are responsible for reifying culture (Bowers, 1993). We then also become estranged from our interspecies educational development. Our lived curricula is co-involved with the curricula of countless humans, but it is also an educational domain co-constructed with all our relations. Not just the shorebirds I visit, but our pets at home, the speckled touch-me-nots and chicory spattered with rain as I peddle past them, even the great willow that feels my feet press the soil with its roots burrowing underground, and the cows and chickens locked in our factories and the workers tending them, and the mysterious *qalipu*, whose age-old tracing across the continent is now broken and treacherous—all these beings, amongst uncounted others, are engaged in this wondrous interactive space, teaching and learning each other into a collaborated-upon future. As I

interpret it, a thread of Gregory Bateson's work implies that these curricular relationships matter for the development and function of ecosystems: curricula vitae are ecological processes.

Bateson's Mind/Body Ecology

Bateson (1972, 1979) challenged the predominant view that ecosystems are "biomachines" that can be understood merely as systems of material or energy exchange (Harries-Jones, 1995). This mechanical metaphor drew from the Darwinian cultural shift that caused us to "exclude mind as an explanatory principle" (Bateson, 1979, p. 20) in evolution. Without discounting Darwinism, Bateson brought the mind back into ecosystems and evolution.[2] Ecosystems emerge through living beings who do not react purely to energy supply or energy availability (Bateson, 1972), but who make decisions based on knowing, communicating, and learning. Thus, ecosystems are great processes built up by exchanges of knowing, communicating, and learning.

We are capable of changing our understanding, often through taking a "bird's-eye view" of actions that we formerly engaged in without consideration. Thus, living beings are capable of changing the context by which they know and learn. Life doesn't simply learn, it also learns how to learn (and learns how to learn how to learn). Similarly, living beings don't simply teach, they also teach how to teach, with whatever contextual messages lying unaware to the learner forming hidden curricula. Bateson, borrowing from philosopher Bertrand Russell, calls these levels of learning "logical types" (Bateson, 1972). Our decisions depend on the level of logical typing that we use to learn and interpret the situation. Based on interpretation and context, it is inherently non-mechanical. It is also ubiquitous among living beings. I have noticed that *Mimosa pudica* (sensitive plants) that grow along well-trodden paths are much less sensitive to touch than those just a few metres in from the brush of traffic. The plant does not just react to the stimulus; it also reacts to its evolving interpretation of the stimulus.

Bateson's understanding undercuts the tendency to see mind as merely some ecological epiphenomenon, while scientists focus on reductionist explanation. Through learning we make and break habits, and re-enforce or disrupt patterns of activity and thought. Habits are not benign. Living beings physically remake the world through habits, and it is in the world that organisms live, so "it is still *habits* which set the conditions for natural selection" (Bateson, 1979, p. 244). All living beings develop habits based on learning, habits that feed back into the world and in turn create the physical conditions of their future habitat. It is this insight that led Bateson to famously declare that the "unit of selection" in evolution is "organism plus environment" (Bateson, 1972, p. 449), each linked together by "mind." Both ecosystems and evolution are co-constructed by cultural factors intermingling with biological ones, interacting recursively *through*

the world and *in* time. Our developing sensitivity to how we teach and learn from other living things shapes the ecosystemic evolution that we co-construct as an interspecies community.

Through Bateson's insights, we can conceive of interspecies relations as educational affairs, and ecosystem development as the playing out of interspecies curricula. Although Bateson discovered elements of how mind/body circuits network themselves into ecosystems and was also clear as to what is toxic to them, he was always reluctant to bring about "solutions," for fear that they would set about inappropriate relations and destructive runaway feedback loops (G. Bateson, 1972; M.C. Bateson, 1972; Charlton, 2008). Because he was so sensitive to the recursive nature of ecological interaction, he knew that any solution could reverberate in dangerous, unanticipated ways.

A Moment With a Tern

I have learnt much from my interactions with the terns and gulls at the mouth of the Etobicoke Creek leading into Lake Ontario this summer. The gulls are less hesitant than the terns when humans approach, but both can eventually come to feel comfortable. I walk out onto the pier to watch them arcing above me, while terns occasionally plunge into the water for fish. The terns' beautiful streamlined bodies, their sharp tails, wings and mouths seem to suggest a symmetry and logic that is beyond human understanding. I am careful not to stare at them; I worry that I may make them feel uncomfortable with an analytical gaze.[3]

A tern is resting on the metal fence of the pier. It shifts positions continuously, unsure whether to fly away or to stay perched, watching me at every moment. I think he is male because he seems bigger than the two others poised beside him a few minutes ago. I read somewhere that male common terns are slightly larger than females.

I occasionally peek at him, but mostly just stand there gazing out at the water, content that we both know that we are both here together. What an wonderful, overlooked feeling this is! Two beings, one larger, one smaller, one feathered, the other clothed, standing in the midmorning sun, simply being aware of each other. I feel him watch me. I glance back at him. He turns away. Now, his looks feel less fearful. He stands sturdily on the beam and watches me watch him.

A woman walks past us, earbuds in her ears. The tern was a little too close to her as she marched by us, and he flies off. With the space between us broken, I feel the loss of his being. The woman's presence entering our space was thunderous. A similarity opened up between me and the tern, fusing our interspecies gulf. We were connected now by our shared sense of the otherness we felt from the woman. Riding my bicycle home, I see how intensely my whizzing wheels affect the birds and squirrels in their daily routines. Thanks to my visit with the tern, these interactions are heightened, and I wonder what sort of work we will have to do as a species to create new sorts of relationships that do not trigger instant apprehension.

Ecologically, it would certainly be significant. Were we careful and respectful wherever we tread, animals would be less frightened of us and would feel more comfortable or able to populate spaces that we have taken for our own. This sort of work might actually be a part of species-saving: as humans expand their reach, most species run away. But there is only so far that they can run, and all of the natural commons are splitting up and diminishing. By attending to the diverse species with time and care, we can develop understandings about how our lives intersect. I have noticed that after a heavy rainfall, terns dive-bomb much less often, probably because they can't see the fish in the water from the cloudy sediment in the river. What role does my own house play in this watershed and how is my tomato garden directly related to he who circles overhead?

Wherever we are, we can gain awareness of the interspecies curricula of which we are always a part. How to do this certainly includes shutting off the bombardment of human-created things that vie for our attention, such as iPods, televisions, advertisements, books, and computers. But it also requires that we simply spend more time directly involved with trying to interact with the species around us in the most non-invasive ways possible. One way to develop perceptual ecology (Thomashow, 2002) is to seek out intimacy and relationship.

The tern I stood with was clearly more interested in me than he was in the woman with the earbuds. By being sensitive to him, I invited him to become more interested in me. This experience reveals the basic fact of our relatedness and invites the tern to consider our shared relationship. His conception of what humans are, what the relationship between humans and terns is, and also of what he himself is, have all shifted slightly by our meeting. To make this claim is not anthropomorphic, but it is anthropocentric to assume otherwise. And insofar as my actions and the tern's actions have readjusted through this encounter, so has our ecosystem developed a new cadence of interspecies meaning.

Weston's Eco-Pragmatism

The American pragmatic tradition, taken up by Weston, recognizes the systemic nature of ecosystems and the problem of recursion while providing interesting ways out of our ecological conundrum. As I explained, Bateson showed that learning relationships are ecological, and ecological relationships are pedagogical (or, as I prefer, *eteragogical*).[4] "Being ecological" is, then, being educative in all our relations. As Dewey realized (1916), an educative experience opens up learners to further development and growth, while a miseducative experience closes them off, limits them, and renders them static. I have diverse relationships with those around me: humans, other animals, and other more-than-animal species. When I close off their potentiality, I am acting miseducatively, which is to say unecologically. Weston's eco-pragmatic approach (1992, 1994, 1996a, 1996b, 2004) favours an opening up of possibilities, instead of prescribing definitive solutions, as an invitation for interspecies relationships not constructed upon preconceived understanding. We can use Weston's pragmatism

to live in the communicational, eteragogical world that Bateson articulated. His interspecies etiquette provides an approach to entering interspecies curricula vitae responsively and enrichingly. He provides a way of linking Bateson's ecological understanding to everyday action.

And according to Weston, we can begin right now. We do not need to be aware of the particular ways in which other species learn from us to begin learning from them. The very awareness that we are being attentively watched and that our actions are eteragogical, in the widest interspecies sense, is itself educational for us, as Weston (2004) demonstrated. We are led to an expanded view of ourselves as we feel how our size, motion, sounds, and manners may be experienced by those who watch us. For example, we can learn how attentively we must tread by considering how we are perceived and trying to feel it viscerally. Am I seen as mountainous and dangerous, with the vibrations of my heavy body's every motion registered in the soft legs of the spider with whom I share a floorboard? Or does the spider, who has just scuttled up the wall, now simply watch my lumbering presence with bemusement from above (as one anonymous reviewer suggested)? Exploring diverse conceptions of how we might be teaching other beings opens up possibilities of co-creating meaning. By recognizing that the spider's perceptual field is neither entirely hidden nor entirely knowable, but as open as my own to discovery and connection, I can enter into eteragogical relationships with it. Awareness of this teaches me: the spider's curricula becomes more complex while, at the same time, shifting the hue of my own.

Weston develops two concepts of particular value for the ecological reconstruction of education that this paper advances. He calls a "self-validating reduction" (1996) the vicious cyclical process whereby disvaluing something in the world contributes to the deterioration or destruction of that thing, which consequently renders it much easier to further disvalue. Consider a prairie that has lost some of its diverse flora and fauna, and is now seen as impure, tainted, or degraded. Conceiving it as just a shadow of its former splendour, we are much less likely to begin protecting it. A way out of this feedback loop is to commit to re-imagining the ecosystem. It is clear that our current way of understanding it has funneled our relations with it into a destructive, recursive nightmare. However, if we open up our minds to the possibility that the prairie might still have more to offer our heads or hearts than we know, that it is not something fixed or determined but rather a constellation of beings in a process of growth and change, with meanings and relations and openings into the world always a little bit hidden and enigmatic for us, then our approach to it shifts. In shifting, we actually see new things and develop new relationships with the beings of the land and become increasingly open to experiencing other novel things with it. Weston calls this alternative feedback loop "self-validating invitation" (1996, p. 129).

Sensitive educators often approach a new classroom with excitement that they will meet all sorts of new people and that unexpected relations will develop.

This attitude opens up a classroom space where students feel comfortable in exploring themselves and each other. Continued growth depends on the teacher's ability to keep open this invitation so that students can feel comfortable and accepted throughout their processes of change. In interspecies relations, the situation is no different. What we can teach and learn from other species diminishes if we are not open to seeing them in unexpected and diverse ways. Weston's "self-validating invitation" opens up the gate to experiencing eteragogical relationships with other living beings.

Though he didn't explicitly address Bateson, Weston invites Bateson's "mind" back into the world. Self-validation shows that appearance and reality, and mind and matter, are not separable, but are interweaving processes irrevocably co-involved. Weston's approach recognizes the recursive nature of our interactions and the dangers inherent in feedback loops that result from understanding things in limited ways. His solution is to create feedback loops that perpetuate possibility, rather than certainty. Weston's reason is similar to Bateson's: erecting any definite principle or solution to counteract our short-sighted, anthropocentric culture is surely doomed because, despite our best intentions, any proposal is still informed by the toxic conceptual residues of our cultural context (Weston, 1992). The way out is to open up possibilities, to invite evolution and diversity back into the world, and to let the world create new relationships on its own. His eco-pragmatic approach refuses the path of "finding the solution" which caused so much fear for Bateson. The solution will evolve out of possibility and is not conditioned by the limited scope of human purpose and rationality. It is a stochastic process, like learning and like evolution as a whole. We provide the diversity, and evolution can "pluck the new from the random" (Bateson, 1979, p. 49). "Humans as managers" is an eteragogically sterile mode of being. We are teachers and learners amongst a community of others. Our part in the interspecies curricula *can* support the regenerative capacity of our Earth.

A New Lesson

I come back to the pier in late September to visit the terns. There aren't any, but I do meet one lone gull, sitting on the metal bar of the fence, not far from where I had been with the tern earlier. I admire her mottled grey and white coat and her calm posture. I approach her cautiously and stand several metres away.

"Hello, how are you?" The gull twitches her head and looks at me even more carefully than she had been.

"I don't really know what to say to you." I glance around to see if anybody is watching. There is a man in a mail truck looking over from the other side of the river. He probably thinks I am using a handless mobile phone.

"People probably think I am crazy trying to talk to you…". I move a little bit closer. "You know, it is so hard being a human in this time." I think about how often I feel as though humans are "fallen" creatures, alienated from a deep magic and interconnection. My emotions, while speaking as candidly as possible to this bird, surprise me. I feel as though I am revealing myself, and I really hesitate to find the right words. My meaning seems to matter to me even more than it does when I casually converse with most humans. I feel vulnerable and exposed.

"But you probably have your own problems too."

A flock of geese flies past us, close to the water, and lands on the beach close by. I gaze out over the pier. I imagine how this might appear to her. I feel a flickering possibility of the place as her home, as a winged being, and how well she must know every turn and every bend of the shoreline, the pattern of trees against the sky from different heights, and where the sun is positioned when the angry dog comes to chase her away every morning.

"Why are you here alone?" I ask. I wonder if she has been thinking the same thing about me. At that moment she flies off, up the river a few hundred metres, turns around and flies back towards me. Passing over the pier, she lands on the opposite shore than the geese had alighted, into a flock of gulls resting on the sand. They are all facing the sun, their bellies shining in the warm light. The lesson she taught me becomes clear. I am astounded. I feel ashamed and confused.

Inviting Invitation

When I asked the gull why she was alone, I altered the contextual dynamics of our relationship. It was at that moment that the gull lost interest and flew away. It was not my act of using a human language that led her to break our interaction: I was coming into the situation nakedly, earnestly trying to communicate in ways natural to my species and I believe she felt that. It was in my asking the question that I was denying our relationship. If she were indeed alone, then how was it that we were interacting? While she is unlikely to have understood the words I was speaking, my words were also accompanied by paralinguistic and kinetic messages—and it is through these messages that living beings, including humans, gain understanding of context (Bateson, 1972). Though I am limited by my mammalian body and human symbolic ordering of the world, my curricula are not simply determined by what I intend. The gull creates interpretations. And yet, the gull taught me that if I explore our relationship honestly, she will respond similarly. Even if neither of us can articulate precisely what it is in the other being that we are responding to, we will evolve relationship.

Perhaps self-validating reduction and self-validating invitation are actually connected, as pieces of the same process occurring at different times. To engage in a relationship with another being, we must find a commonality and both creatures reduce the range of their actions to do so, making relationship depend on reduction as much as on invitation. Bateson noted that his gibbon and his

dog used to play by finding a pattern that worked for both of them (1979). But is the reduction permanent or is it breakable? Is it imposed by and broken by the human, or is it co-constructed? Humans are often the pattern imposers and the patterns breakers, but we need to become more skilled at listening to the other being to see what sort of relationship we can co-create. In other words, self-validating invitation works on a metalevel: the invitation must be the context *of* the context of the interaction. It must be in the "hidden curricula" of the relationship! To use Bateson's terminology, it is an invitation on a level of a higher logical type, which allows both moments of reduction and moments of invitation in actual interaction.

Notes

1 The term "curriculum vitae" has been used by Jardine (1998) differently, describing a curriculum that exudes "generativity, movement, liveliness, and difficulty" (p. 73), rather than actually being played out through the process of living. While his use is metaphoric, mine is literal.

2 Bateson's "mind" is not necessarily conscious. For Bateson consciousness can, at most, operate as a *part* of mind, and is often a misleadingly linear arc in what is actually a circular, recursive system.

3 One reviewer commented that I may be "too mammalian" with my concern over whether or not my stare is perceived by the tern as "analytical." This may be so. However, at the time, this was the precaution and the rationale behind it. I suspect that it is as difficult to transcend my mammalian nature as it is to establish how non-mammalian beings feel about staring.

4 "Pedagogical" has etymological roots relating to leading or guiding children. "Etera" is Greek for "other," and "eteragogical" is a term that can refer to the educational dimension we refer to as "pedagogy," but with respect to not only children, but adults, other living beings, and also oneself.

Notes on Contributor

Ramsey Affifi is a PhD student at the Ontario Institute for Studies in Education, University of Toronto. He is the founder and director of the organization Sustainable Laos Education Initiatives and the Sai Nyai Eco-School. **Contact:** r.affifi@utoronto.ca

References

Abram, D. (1996). *The spell of the sensuous: Perception and language in a more-than-human world*. New York, NY: Random House.

Apple, M. (1975). The hidden curriculum and the nature of conflict. In W. Pinar (Ed.), *Curriculum*

theorizing: The reconceptualists (pp. 95-119). Berkeley, CA: McCutchan.

Armbruster, K. (1998). Creating the world we save: The paradox of television nature documentaries. In R. Kerridge & N. Sammels (Eds.), *Writing the environment: Ecocriticism and literature* (pp. 97-122). New York, NY: Zed Books.

Bateson, G. (1972). *Steps to an ecology of mind.* New York, NY: Ballantine Books.

Bateson, G. (1979). *Mind and nature: A necessary unity.* Toronto, ON: Bantam Books.

Bateson, M. C. (1972). *Our own metaphor*. New York, NY: Knopf.

Bell, A. (1997). Natural history from a learner's perspective. *Canadian Journal of Environmental Education, 2*, 132-144.

Bell, A. & Russell, C. (2000). Beyond human, beyond words: Anthropocentrism, critical pedagogy, and the poststructuralist turn. *Canadian Journal of Education, 25*(3), 188-203.

Bowers, C. A. (1993). *Education, cultural myths, and the ecological crisis: Toward deep changes*. Albany, NY: State University of New York Press.

Bowles, S. & Gintis, H. (1976). *Schooling in capitalist America: Educational reform and contradictions of economic life.* New York, NY: Basic Books.

Charlton, N. (2008). *Understanding Gregory Bateson: Mind, beauty and the sacred Earth*. Albany, NY: State University of New York Press.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. New York, NY: MacMillan Company.

Dillard, A. (1988). *Pilgrim at Tinker Creek*. New York, NY: Harper Perennial.

Eisner, E. (1994). *The educational imagination: On the design and evaluation of school programs* (3rd Ed.). New York, NY: MacMillan.

Everhart, R. (1983). *Reading, writing and resistance: Adolescence and labor in a junior high school.* Boston, MA: Routledge & Kegan Paul.

Evernden, N. (1985). *The natural alien*. Toronto, ON: University of Toronto Press.

Fawcett, L. (2000). Ethical imaginings: Ecofeminist possibilities and environmental learning. *Canadian Journal of Environmental Education, 5*, 134-147.

Giroux, H. (2001). *Theory and resistance in education: Towards a pedagogy for the opposition.* Westport, CT: Begin & Garvey.

Harries-Jones, P. (1995). *A recursive vision: Ecological understanding and Gregory Bateson.* Toronto, ON: University of Toronto Press.

Illich, I. (2000). *Deschooling society.* London: Marion Boyars Publishing.

Jackson, P. (1968). *Life in schools.* New York, NY: Holt, Rinehart & Winston, Inc.

Jardine, D. (1998). *To dwell with a boundless heart*. New York, NY: Peter Lang Publishing.

Kahn, R. (2002). Paulo Freire and eco-justice: Updating *Pedagogy of the Oppressed* for the age of ecological calamity. *Freire Online Journal, 1*(1).

Kahn, R. (2008). From education for sustainable development to ecopedagogy: Sustaining capitalism or sustaining life? *Green Theory and Praxis: The Journal of Ecopedagogy, 4*(1), 1-14.

Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge, MA: Cambridge University Press.

Margolis, E. & Romero, M. (1998). "The department is very male, very white, very old and very conservative": The functioning of the hidden curriculum in graduate sociology departments. *Harvard Educational Review, 68*(1), 1-33.

McKay, D. (2000). *Another gravity*. Toronto, ON: McClelland & Stewart Ltd.

McLuhan, M. (1964). *Understanding media: The extensions of man*. New York, NY: McGraw-Hill.

Oakley, J. (2009). Under the knife: Animal dissection as a contested school science activity. *Journal for Activist Science and Technology Education*, *1*(2), 59-67.

Oliver, M. (1992). *New and selected poems: Volume one*. Boston, MA: Beacon Press.

Sambell, K. & McDowell, L. (1998). The construction of the hidden curriculum: Messages and meanings in the assessment of student learning. *Assessment and Evaluation in Higher Learning, 23*(4), 391-402.

Selby, D. (1995). *Earthkind: A teacher's handbook on humane education*. London: Trentham Books Ltd.

Snyder, B. (1971). *The hidden curriculum*. New York, NY: Knopf.

Thomashow, M. (2002). *Bringing the biosphere home: Learning to perceive global environmental change*. Cambridge, MA: MIT Press.

Weston, A. (1992). Before environmental ethics. *Environmental Ethics, 14*, 323-340.

Weston, A. (1994). *Back to Earth: Tomorrow's environmentalism*. Philadelphia, PN: Temple University Press.

Weston, A. (1996a). Self-validating reduction: A theory of the devaluation of nature. *Environmental Ethics, 18*, 115-32.

Weston, A. (1996b). Deschooling environmental education. *The Canadian Journal of Environmental Education, 1,* 35-46.

Weston, A. (2004). What if teaching went wild? *The Canadian Journal of Environmental Education, 9*, 31-49.

Willis, P. (1977). *Learning to labour: How working class kids get working class jobs*. Lexington, KY: Heath.