

## ***Toward a Participatory Worldview: Awakening to our Interdependent Nature***

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*Being itself is not endangered, but if we humans wish to continue to participate in the world and to honor it in any semblance of the form which has generated and nourished life thus far, then we must quite self-consciously revive our practice of interconnectedness and reweave, or otherwise support the reweaving of, the fabric which includes us. We must engage, we must enlist our bodies in the work which has always been done by the biosphere as a whole. We must lend a hand. —Joan Halifax & Marty Peale*

### **Introduction**

The ecological crisis I describe has informed my professional and personal life over a period of twenty-five years. As a parent homeschooling her children while deeply engaged with critical pedagogy as a post-secondary student, I synthesized my studies by connecting feminism, ecology, and Buddhism. I came to an intellectual understanding of my experience in the world through feminist theory and discovering that both nature and women have been devalued in patriarchal societies I began to explore the relationship between my body and nature. I chose to develop my capacity for relationship through spiritual practice and, over time, developed an educational philosophy and practice that integrated body, mind and spirit in an ecological context. As an activist and educator I am encouraged by the holistic models that have developed as a result of the work of Freire, Dewey, hooks, Giroux, Montessori, Steiner and many others. However I have found that people consistently ignore the critical importance of our membership in the natural world to how we think, how we feel, and how we experience ourselves as something greater than our bodies and minds. It is for this reason that - my research focuses on the connection between people and nature; and why I participate in the Institute for Body, Mind and Spirit at Lesley University.

As a professional in the field of environmental education, I work with others to create a container for transformative learning that develops an ecological consciousness. I direct the Audubon Expedition Institute (AEI) at Lesley University, a program of:

higher education that fosters ecological awareness and personal and societal transformation through immersion in a variety of environments and cultures, critical reflection, and experiential learning communities. As learners, we awaken to a deeper sense of participation within the web of life and engage in lifelong ecological and social justice and responsible global citizenship (2002, p.9).

We offer the opportunity to profoundly connect with the Earth and with each other physically, psychologically and spiritually. Staff, faculty and students create collaborative circles where we explore these relationships in the context of our own practice, assess the effectiveness of our curriculum and explore the structures that support or constrain our ability to engage in transformative education.

As I participated in green politics and environmental education, I gained a significant understanding of the ecological health (or lack thereof) of the planet. Despite this knowledge and subsequent behavior changes, I do not believe that I, or others, have managed to effect the changes necessary to sustain a healthy planet, or at least a planet where life (including human life) is diverse and thriving. Theologian and leading environmental thinker Thomas Berry and physicist Brian Swimme (1994) offer us a cosmology—the Universe Story—that names our current era as a transition from the Cenozoic to the Ecozoic Era. If we are to successfully make this transition as a species I believe we need to integrate body, mind and spirit in an ecological context that leads to changes in psychology, education and economics; in the healing arts; and in our spiritual practices.

According to Drs. Paul Ray and Sherry Anderson (2000), seventy to ninety percent of the people in the world share a concern about the health of the environment (p.140). I believe that in the United States a significant and growing percentage of the population agrees that there is an ecological crisis and that changes in behavior are necessary if we are to preserve the well-being of the Earth as a whole and humanity in particular. The magnitude of the concern leading to the needed changes in behavior by those of us whose lifestyles are contributing to the deterioration of the environment is related to how deeply we experience ourselves as part of nature (Schultz, 2000). My work rests on the assumption that profound experiences of interdependence with the natural world increase people's commitments to moving away from behaviors that contribute to the environmental degradation affecting both human and other-than-human communities. For

example, through experiences of interdependence in nature, some people discover an affinity for water and develop an activist approach that has both local and global implications. Others notice that songbirds are disappearing in their own backyards; are moved to learn more; and in so doing, discover how the loss of bird habitat in South America is connected to trade issues, to the displacement of indigenous peoples. I believe the more people nurture their relationship with the Earth, the more they will be motivated to develop (or deepen) personal practices that increase their ability to live equitably within the means of nature.

### **Context: Ecological Crisis**

Each year there are fewer songbirds waking me up on early spring mornings. The farmer up the road has discovered that the fertility of his Maine soil is declining because of coal burning plants in Ohio, and I find it difficult to afford food that is not contaminated with herbicides and pesticides. I now have friends whose illnesses include ‘environmental sensitivities,’ and detoxing no longer refers only to alcoholics. Each time I make a purchase I wonder if I am supporting a sweatshop or a “free” trade zone, or participating in the creation of a chemical wasteland in someone’s backyard. A description of how such a situation has come about and what people are doing about it provides the context for becoming more deeply connected to the earth and the rationale for inquiring into how to develop that deeper relationship.

### **What’s happening?**

In 1974, systems and policy analysts Donella Meadows, Jorgen Randers and Dennis Meadows published research on possible future scenarios based on population growth and resource use. At that time, it seemed possible to recognize the relationship between a finite system—the Earth—and resource use, and to develop sustainable human economies without serious economic decline. Thirty years later, in the second edition of the publication -, the authors (2004) claim the human population is in “overshoot” and the actions needed now are ones that will only minimize, rather than avoid, the results of economic decline. According to these researchers, the conditions that produce overshoot are growth, acceleration, and rapid change; some form of limit or barrier beyond which the system may not safely go; and a delay or mistake in the perceptions and the responses that strive to keep the system within its limits (p.1). The authors believe that all of these conditions exist today.

Worldwide economic expansion and population growth have exploded and according to environmental analyst Lester Brown (2001), “the sevenfold growth in global output of goods and services since 1950 dwarfs anything in history” (p.19). In the past, the economies of industrialized countries grew one or two percent a year. Since the nineteen nineties, some developing countries are growing at the rate of seven percent a year (Brown, 2001, p.20). Growth, acceleration and rapid change characterize the global economy. What is the limit beyond which the system may not go?

All economic activities depend on the Earth’s resources. Everything on the planet (except sunshine and the occasional meteor) comes from the Earth and eventually returns to it. “Nature supplies material requirements for life, absorbs our wastes, and provides life-support services such as climate stabilization” (Wackernagel & Reese, 1996, p.8). In other words, like any other animal, humans have a habitat (the earth); and that habitat has a carrying capacity—the maximum population (of all beings) it can sustain indefinitely. Populations must act within the constraints of the system or perish. Since people are part of the earth system, this means not using resources at a faster rate than they can be renewed or replaced, and being careful not to poison the system with our waste.

There is growing scientific data that supports the conclusion “that humanity’s collective demands first surpassed the earth’s regenerative capacity around 1980” (Brown, 2003, p. 4), and that this consumption is resulting in economic decline. Environmental analyst Lester Brown (2001) writes:

Evidence that the economy is in conflict with the earth’s natural systems can be seen in the daily news reports of collapsing fisheries, shrinking forests, eroding soils, deteriorating rangeland, expanding deserts, rising carbon dioxide (CO<sub>2</sub>) levels, falling water tables, rising temperatures, more destructive storms, melting glaciers, rising sea levels, dying coral reefs, and disappearing species. These trends, which mark an increasingly stressed relationship between the economy and the earth’s ecosystem, are taking a growing economic toll. (p.4)

Furthermore, that economic toll is not shared equally within, nor among, nation s. As the global economy grows, so do the inequities. Indigenous peoples, people of color and other oppressed groups are at greater risk from environmental hazards and do not have equal access to the decision-making processes that insure a healthy environment in which to live, learn, and work

(Fernandes, 2001). The global economic system—focused only on a bottom line divorced from people or place—has forced a shift “from subsistence to cash-crop agriculture, the loss of common land, and government policies that ... have all helped bankrupt millions of peasants [driving] them from their land—sometimes into slavery” (Bales, 1999, p.13).

Mathis Wackernagel’s (1996) research on ecological footprints—using data gathered by the United Nations—makes the case that if the more than six billion people living on earth shared the standard of living (and the methods for obtaining that standard) experienced in industrialized countries, we would need at least three more Earths to provide sufficient resources. Since in industrialized nations, “endless economic growth driven by unbridled consumption has been elevated to the status of a modern religion,” and industrialized nations are rapidly developing new congregations in an “emerging global middle class” without regard to establishing ecologically sustainable economies, it seems we will need those extra planets (State of the World 2004, 5, ¶2). The average person in the U.S. uses twenty-three or more acres of land and sea to support his or her lifestyle compared to less than five acres used per person in India and China (Venetoulis et.al., 2004, p.14). It is clear that changes in consumption patterns and the economies that promote them are as important as decreasing the growth of human populations.

Despite a growing body of scientific evidence documenting the negative impact of human population and consumption on the world’s ecosystems (including their human communities), it is also becoming clear that “we lack the perspectives, the cultural norms, the habits, and the institutions to cope”(p.3). Unable to stay within the limits of the system, we are satisfying the last condition of overshoot—our beliefs do not match our reality.

### **Why is this happening?**

If the deer herd in my backyard experienced a rapid population growth coupled with an increase in per capita consumption, most would starve within a couple of years. If they overgrazed the land, it would not regenerate in time for them to return to their previous population. Human communities are subject to this same dynamic, except that now—as a result of the rapid growth of technology, the stored energy of fossil fuels, and a disregard for human rights; some people

are global grazers and the consequences of this consumption are delayed for the wealthiest nations. What made this rapid growth in population, technology, and consumption possible?

Ten thousand years ago, the agricultural revolution set the stage. As one adaptation to shrinking food sources, some people “started domesticating animals, cultivating plants, and staying in one place...The ideas of wealth, status, inheritance, trade, money, and power were born” (Meadows, 2004, p.267) The industrial revolution is generally recognized as beginning in Great Britain in 1750 A.D. when coal replaced trees as the major source of fuel (p.269). As trees became scarce, investing in coal mines made economic sense and the infrastructure that grew around the mines required new technologies. “Machines not land became the central means of production” (p. 270).

First Great Britain, then Europe, and eventually the United States shifted economic production, from agriculture to factories. Mechanical innovations and the rapid growth of urban areas led to the formation of families and communities whose central focus were no longer the earth and its abundance. The rise of commercial capitalism and a market economy meant that wealth and status could now be obtained through profit accumulation in addition to land ownership. European-American people who had once been deeply connected to the land in their daily work were now separated from it by work in factories and urban living. This revolution in how our ancestors lived was also a revolution in how they thought.

The increasing need for the products of the earth and the subsequent destruction of forests and mined land could no longer be supported by an indigenous or organic worldview that experienced the Earth as an evolving living organism. Environmental historian Carolyn Merchant (1980) wrote that “between the sixteenth and seventeenth centuries the image of an organic cosmos with a living female earth at its center gave way to a mechanistic worldview in which nature was reconstructed as dead and passive, to be dominated and controlled by humans”(p.xvi). This new worldview was based on the metaphor of the machine. The Earth was perceived as a collection of parts and in industrialized societies, the idea that the Earth had capacities related to its wholeness was lost—as a mechanism it was now only the sum of its parts.

As the practice of science uncovered progressively smaller units of matter, the ability to apprehend nature as a whole was devalued. The knowledge of the earth available through intuitive (or nonrational) embodied experience, or through recognition of process and interrelationships (systems thinking) did not fit into the reductionist paradigm created by the developing sciences. According to author Linda Kohanov (2003), a specialist in Equine Experiential Learning and Equine Facilitated Psychotherapy:

Vast nuances of information arise from behavior, emotional import, intent, and more subtle energetic exchanges, qualities so grossly downplayed in postindustrial society that people are losing their ability to function fully and authentically. (xxx)

The loss of knowledge through intuition and/or embodied experience, the scientific emphasis on reason, and the development of technologies that allowed people to spend less and less time outdoors, have resulted in industrialized and post-industrialized societies where people act as if they are not part of nature or subject to its principles

This disconnection between our bodies and the world is particularly evident in the increasing rates of obesity and degenerative diseases in countries that have applied a mechanistic worldview to agriculture. In her book *Real Food*, Nina Planck (2006) writes, “The so-called diseases of civilization are caused by the foods of civilization. More accurately, the diseases of *industrialization* are caused by the foods of *industrialization*.” In these societies our human behavior provides clear evidence of how alienated people are from the natural world. We pollute the air we breathe and the water we drink, and destroy the soil that grows our food. Yet we continue to seek solutions that do not recognize that people are natural systems embedded in a larger system. We do not seem to recognize the natural restraints of that system, and I think this is because we do not consciously experience ourselves as part of nature.

**What can we do?**

A shift in worldview is necessary to bring industrialized societies into ecological balance. In her list of the ten leverage points that create systemic change, activist and scholar Donella Meadows (1997) said that the most effective leverage point is also the most difficult--the mindset or paradigm out of which the system arises. (I use the words 'paradigm' and 'worldview' synonymously as the belief structure out of which each of us operates.) Since "the 12 percent of the world living in North America and Western Europe account for 60 percent of global private consumer spending" (Signposts, 2004), a change from the mechanistic, dualistic worldview that is predominant in the United States could mitigate the effects of overshoot through the development of sustainable human economies. William D. Ruckelshaus, twice Director of the Environmental Protection Agency and later Chairman of the Board of the World Resources Institute asks:

Can we move nations and people in the direction of sustainability? Such a move would be a modification of society comparable in scale to only two other changes: the Agricultural Revolution of the late Neolithic and the Industrial Revolution of the past two centuries. Those revolutions were gradual, spontaneous, and largely unconscious. This one will have to be a fully conscious operation, guided by the best foresight that science can provide...If we actually do it, the undertaking will be absolutely unique in humanity's stay on the Earth. (Meadows, Randers & Meadows, 2004, p.265)

There is a conscious revolution (a sustainability revolution) happening worldwide. Quantum physicists are coming together with molecular biologists, integral philosophers, architects, engineers and community leaders to design sustainable human systems guided by ecological principles. Since 1990, thousands of these innovators have gathered at the yearly Bioneers<sup>1</sup> conference) to share their experiences. Whether this revolution will be successful—will result in sustainable communities—is not yet known. If it succeeds, I believe that like the agricultural and industrial revolutions, this sustainability revolution will result in a change in our worldview. We need to consciously seek this change if we are to respond effectively to the ecological crisis now upon us.

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<sup>1</sup> Founded in 1990, Bioneers is a nonprofit organization that promotes practical environmental solutions and innovative social strategies for restoring the Earth and communities. [www.bioneers.org](http://www.bioneers.org)

## A participatory worldview

What worldview will emerge as sustainability becomes the driving force for our communities?

A mechanistic worldview focuses on objects while a participatory worldview emphasizes process and relationship (Capra, 1996; deQuincey, 2002; Fisher, 2002; Heron, 2003; Reason & Bradbury 1997; Skrbina, 2001). The former is characterized by separation and the latter by interdependence. It makes sense that developing a participatory worldview will help us transition out of the Industrial period and into the sustainability period.

A participatory worldview recognizes that “our world is co-created both by the given cosmos and by how we apprehend it and make choices within it” (Heron, 2001, p. 333). Since the 1970’s, discoveries in neurobiology support the theory that “cognition...is not a representation of an independently existing world, but rather a continual *bringing forth of a world* through the process of living” (Capra, 1996, p.267). Peter Reason (1998), a practitioner of participatory action research and co-operative inquiry, summarizes the ontology of a participatory worldview as a subjective-objective reality comprised of

a given cosmos, a primordial reality, in which the mind actively participates. Mind and the given cosmos are engaged in a cocreative dance, so that what emerges as reality is the fruit of an interaction of the given cosmos and the way mind engages with it. (p.44)

According to ecopsychologists, cognitive scientists, some indigenous peoples and mystics, the cognitive interaction between our embodied selves and the context in which we are embedded is intelligent, responsive and interdependent (Capra, 1996, p.269). As conscious beings made of the sun, water, air and earth, we participate as co-creators in an alive, intelligent universe.

Knowledge evolves as interplay—a dialogue—between matter and mind, human and other, the stars and the grasses. Restoring a conscious participation in this dance could expand our capacity to make decisions that serve the whole.

In his doctoral dissertation on participatory worldview, David Skrbina (2001) also calls for a different worldview at this time. His philosophical exploration of participation, an exchange that is co-creative, as a key aspect of a participatory worldview provides a foundation for

understanding how reciprocity, inter-subjectivity and communion are not only possible, but offer the potential for fundamental change. In his final chapter, Skrbina concludes:

The means by which participation is physically embodied is in the manifold forms, structures and systems of the universe. From the noetic perspective, it represents a panpsychic vision of mind, of mind as immanent in all levels of being.<sup>2</sup> Thus participation is the unifying factor of a Participatory Reality. *In this sense participation is the single most fundamental fact of existence.* It underlies being and becoming, mind and matter (p.332).

Skrbina offers an in-depth discussion of the history of the idea that all matter has consciousness and he situates his theory of hylonoism (all matter is alive) as an interpretation of participatory philosophy. His study is informed by the work of anthropologists, social scientists, physicists, and philosophers. According to Skrbina (2001), the idea that matter has consciousness is the basis for a participatory worldview that is fundamentally interactive and provides the foundation for a participatory epistemology that makes real the connection between self and other. Restoring a conscious connection between people and nature or fostering a participatory worldview “places us back in relation with the living world—and we note that to be in relation means that we live with the rest of creation as relatives, with all the rights and obligations that implies” (Heron & Reason, 1997, p.4). According to researchers Bradbury and Reason (1997), a participatory worldview is an embodied, cognitive experience that “locates the practical response to human problems in its necessary wider, spiritual context” (p.11).

### **How might a participatory worldview help?**

Psychologist P. Wesley Schultz (2000) studied research on the relationship between environmental issues and pro-environmental behavior for thirty years and began to define a “broad social-cognitive theory for environmental concern” (p.91). He identified three types of environmental concern that motivate pro-environmental behavior: egoistic (concern for self first), social-altruistic (includes concern for other people), and biospheric (includes concern for all living things) (p.392). Schultz believes that “the types of environmental concerns people develop are associated with the degree to which they view themselves as interconnected with nature” (p.392).

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<sup>2</sup> In other words in terms of consciousness, mind is everywhere.

According to Schultz (2000), people with each type or level of concern can intervene positively in the system that is creating environmental degradation and social injustice. For example, at the egoistic level a person can ride a bike to work because in addition to reducing pollution and a reliance on oil, riding a bike increases personal health and saves money. At the social-altruistic level, moral principles and a desire to increase the welfare of the collective can stimulate grass-roots activism against institutions, such as the World Trade Organization or the U.S. government, that are perceived to be engaged in activities that create social injustice and environmental degradation. Biospheric concern includes consideration of the more than human world as expressed in the following words of environmental activist John Seed (1988):

There and then I was gripped with an intense, profound realization of the depth of the bonds that connect us to the Earth, how deep are our feelings for these connections. I knew then that I was no longer acting on behalf of myself or my human ideas, but on behalf of the Earth...on behalf of my larger self, that I was literally part of the rainforest defending itself (p.66).

I believe this biospheric concern needs to be developed by more people of the western world so that we are acting on behalf of something larger than ourselves, and that developing a biospheric concern is enhanced by the felt experience of interdependence expressed above by John Seed. Using Peter Reason's more poetic language, another way to describe this development of biospheric concern is the recovery of "the grace of embeddedness in the natural world" (Reason, 2004, p.18). Recovering the grace of embeddedness restores to consciousness the relationship between self and other, between me and the plants and animals with which I live, and makes communication possible with beings that don't speak the language(s) of humans. I believe that this grace of embeddedness in the natural world nurtures a participatory worldview and expands the human capacity to act in service to the whole. John Seed's actions were not for him or other humans; he became the rainforest acting for itself.

Author Tom Harmer (2003) writes, "The earth is always speaking to us, tellin' us how to live, how to be on her side. Most of it falls on deaf ears. I'm just tryin' to learn how to listen" (p.172). It seems clear that to make the shift to a participatory worldview, to feel a biospheric concern and recover the grace of embeddedness—to learn how to listen—requires the development of an ecological consciousness. By this I mean not only a knowledge of the relationships among living

organisms, but a deeply felt awareness of interdependence arising out of personal experience of those relationships.

## **Ecological consciousness**

The recognition that many people are disconnected from nature is not new, nor is the idea that restoring that connection might contribute to our personal and planetary health. In the United States, some people date the beginning of the American environmental movement to 1845 when Henry David Thoreau moved to Walden Pond (Environmental Movement Timeline, 2005). Thoreau's decision to live a simpler life is seen as an attempt to restore connection and further develop his ecological consciousness. Many years later, the industrialized society to which Thoreau was responding has grown, as has the recognition that our western lifestyle has created an ecologically illiterate population disconnected from nature. I believe that the environmental education movement in the United States is an insufficient response to this illiteracy, and that a transformative model of education is necessary at this time if we are to develop the participatory worldview I believe is essential to ecological consciousness. The transformative education I envision includes what psychotherapist Andy Fisher (2002) calls the project of ecopsychology, a historical undertaking comprised of four tasks that are specific to this moment in time (p.6).

Fisher describes these four tasks as:

- Psychological: To acknowledge and better understand the human-nature relationship as a relationship;
- Philosophical: To place psyche (soul, anima, mind) back into the (natural) world;
- Practical: To develop therapeutic and recollective practices toward an ecological society;

Critical: to engage in ecopsychologically based criticism (2002, p.7-16).

The four tasks of ecopsychology provide a framework or map of what we can do to restore ecological consciousness.

Looking at lifestyle decisions that people in the United States are still making even though many environmental crises have been brought to our attention, it seems clear that the thirty plus years of environmental education in the U.S. is an insufficient response to the crisis we now face.

According to the Report *Assessing Environmental Education in the United States and the implementation of the National Environmental Education Act of 1990*:

Environmental education is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address these challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action (p.3).

Although the North American Association for Environmental Education (NAAEE) has been actively promoting and developing non-formal and formal approaches to develop this literacy since 1971, a 2004 summary of ten years of research by the National Environmental Education and Training Foundation (NEETF) and leading U.S. consumer market research and trends company Roper Starch found that widespread environmental illiteracy persists. According to the research summary by former NEETF president Kevin Coyle (2004):

- Just 32% of Americans have a basic awareness of environmental topics
- All but 20% are heavily influenced by incorrect or outdated environmental myths
- Just 12% can pass a basic quiz on awareness of energy topics (p.8)

Despite this illiteracy, the 1990 Environmental Education Act, and the United Nations Decade of Education for Sustainable Development (2005-2015), the Bush White House recommended cutting all support for environmental education in 2005.

Though public education in the United States has not yet implemented environmental education as a core discipline in the education of its citizenry, educators in both nonformal and formal settings have developed curriculums and programs, standards for excellence, and teacher trainings ([www.eelink.net](http://www.eelink.net)). However, like many of the authors cited earlier (Bales; 1999; Brown, 2003; Gardner, Assadourian & Sarin, 2004; Meadows, Randers & Meadows, 2004), I don't believe these efforts are sufficient to meet the challenges of population growth and increasing consumption. In addition, "environmental education is at risk of becoming an instrument of dominant state policies that...continue to distract people from the goal of developing an ecological conscience rooted in connection to the land" (Gruenewald, 2003, p.29). As a result, environmental education could have the effect of continuing to maintain the status quo instead of transforming worldviews. As evidence mounts in support of overshoot and a

resulting economic decline, it seems prudent to look beyond mainstream educational methods for solutions.

Developing a participatory worldview and biospheric concern requires education that is transformative. Transformative education changes perceptions and actions at a fundamental level, at the level where we form our values and beliefs. In distinguishing between education that conditions people to conform to an accepted worldview and education that is transformative, Brazilian educator Paulo Freire (1970) quotes Richard Shaull:

There is no such thing as a neutral educational process. Education either functions as an instrument which is used to facilitate the integration of the younger generation into the logic of the present system and bring about conformity to it, or it becomes the practice of freedom, the means by which men and women deal critically and creatively with reality and discover how to participate in the transformation of their world (p.16).

The reality we are experiencing in 2005—a Western culture so disconnected from nature that the consequences are planetary—compels a creative, participative, and transformative response. Transformative learning in this context means discovering the beliefs and assumptions energizing that alienation, developing the methods for changing those beliefs, and constructing a new worldview.

I am making the case that healing our disconnection from the Earth will positively affect industrialized human behavior towards a more sustainable future. In the discussion that follows I name disciplines and philosophies that explore this connection—deep ecology and ecopsychology—and concepts such as biophilia, intersubjectivity and reciprocity that attempt to describe a felt relationship between the human and other than human world. Like environmental education, these ideas and disciplines have taken shape since the 1960's and 70's as a response to the growing ecological crisis. Each of them speaks to the development of an ecological consciousness.

I agree with the way Gregory Smith & Dilafruz Williams (1999) differentiate ecological education from mainstream environmental education. Smith and Williams define the first principle of ecological education as the “development of personal affinity with the earth through

practical experiences out-of-doors and through the practice of an ethic of care” (p.7). Similarly, Pulitzer Prize winning author and biologist E.O. Wilson (1993) uses the term ‘biophilia’ to describe this affinity. He defines biophilia as “the innately emotional affiliation of human beings to other living organisms” (p.1). Other terms—biospheric concern (Schultz, 2000), mutual reciprocity (Schauffler, 2003); empathic resonance, intersubjectivity (de Quincey, 2005) and interbeing (Hahn, 1998)—also describe this experience of the interrelatedness or interdependence that is part of developing the ecological consciousness necessary to a participatory worldview.

In her study of ecological conversions of a person “turning to earth,” Marina Schauffler (2003) names reciprocity as one of the key elements of becoming reconnected “with the ecological whole” (p. 6). The experience of reciprocity awakens empathy and this “empathic understanding confers on each being the status of a valued subject, a creature of intrinsic worth rather than an incidental accessory or backdrop” (p. 93). This idea that all beings have intrinsic worth is a major emphasis of the deep ecology movement (Sessions, 1995), a response to the ecological crisis that removes humans from the center of concern and acknowledges the spiritual component in the experience of interdependence.

- Ecopsychology has developed as a response to the loss of a conscious experience of interdependence. As a practice, it explores “the basic shifts in our patterns of identity and relationship that occur when we include our connection to the web of life around us as essential to human well-being” (Fisher, 2002, p. 4).

Fisher defines recollective practices as “activities that aim more directly at recalling how our human psyches are embedded in and nurtured by the larger psyche of nature and at relearning the essentially human art of revering, giving back to, and maintaining reciprocal relations with an animate natural world” (p.13). These practices allow us to experience ourselves in relationship physically, psychologically and spiritually.

James Swan (2000), one of the first environmental psychologists, describes five paths to developing nature kinship, ecological consciousness and ecological advocacy: 1) becoming well-

informed; 2) developing a concern for personal and public health; 3) seeking personal health and fitness; 4) nurturing a sense of social justice; and 5) paying attention to emotional/spiritual experiences (p. xxiv-xxviii). Environmental education in the United States has tended to take an instrumentalist approach, focusing on “some form of conventional literacy [and] when this happens, the importance of experience, perception, and the development of empathetic connection is marginalized” (Gruenewald, 2003, p.34). Experiences of embeddedness and interdependence are the emotional/spiritual experiences in Swan’s fifth path. This path makes possible, or at least enriches, all the other paths. “Emotions....make possible the evaluative experience of self and world, and therefore are the very precondition of moral perception, of being able to ‘see’ a situation morally before deliberating rationally about it” (Thompson, 1999, p.16).

Environmental education has not created the changes in understanding and behavior that are necessary to respond to what is happening to the ecosystems on which we depend and of which we are a part. I believe that experiential education models that lead to the development of ecological consciousness—the project of ecopsychology—are necessary to creating the felt connection to nature that results in the types of concern that motivate pro-environmental behavior.

### **Awakening to an Interdependent Nature**

Ecological education is a transformative learning model that develops ecological consciousness through direct experience with places, people and cultures. According to education professors Gregory A. Smith & Dilafruz R. Williams (1998) the following principles guide this educational experience:

- Development of personal affinity with the earth through practical experiences out-of-doors and through the practice of an ethic of care
- Grounding learning in a sense of place through the study of knowledge possessed by local elders and the investigation of surrounding natural and human communities

- Induction of students into an experience of community that counters the press toward individualism that is dominant in contemporary social and economic experiences
- Acquisition of practical skills needed to regenerate human and natural environments
- Introduction to occupational alternatives that contribute to the preservation of local cultures and the natural environment
- Preparation for work as activists able to negotiate local, regional, and national governmental structures in an effort to adopt policies that support social justice and ecological sustainability
- Critique of cultural assumptions upon which modern industrial civilization has been built, exploring in particular how they have contributed to the exploitation of the natural world and human populations (p. 7)

Using these principles as a guide to develop environmental education experiences addresses the psychological, philosophical, practical and critical tasks of ecopsychology thus developing the ecological consciousness that is a critical component of a participatory worldview. The education is experiential by necessity (how else can one come into a felt relationship with place?) and as participants experience an embodied relationship with the whole of their environment their level of concern changes and with it their behavior.

Engaging consciously in the creative transformation of a mechanized, industrial worldview to a participatory worldview at a societal level requires an understanding of the need for such a change and the capacity to do it. The earth is currently speaking to us through a changing climate and compromised ecosystems. Some of us are listening and changing—whether we have the capacity to make it a revolution on the scale of the agricultural and industrial revolutions will depend on how we respond to the coming challenges as educators and citizens. This response must be an integrated approach to the whole of our experience—to our embeddedness in nature as bodies, minds and spirits.

### The Peace of Wild Things

When despair for the world grows in me  
and I wake in the night at the least sound  
in fear of what my life and my children's lives may be,  
I go and lie down where the wood drake  
rests in his beauty on the water, and the great heron feeds.  
I come in to the peace of wild things  
who do not tax their lives with forethought  
of grief. I come into the presence of still water.  
And I feel above me the day-blind stars  
waiting with their light. For a time  
I rest in the grace of the world, and I am free.

Wendell Berry

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