

THE NATURAL WORLD AS PREPARED ENVIRONMENT

by Louise Chawla

Louise Chawla's autobiographical beginning of this article shows the integration of her world-famous science of the environment and its relationship to early and middle childhood development as it finds its roots in Montessori education. Her academic training brought her to Edith Cobb's writing and unveiled the origins of kinship to the natural world in the developing young human. Her own exploration of nature and culture caused her to return to Montessori writings with a fresh understanding of the natural world as a prepared environment. Louise Chawla stresses that children must frequently encounter "the natural world with empathy and delight" and the prepared environment supports them as they become creative citizens of humanity.

When David Kahn asked me if I would talk to you about "The Natural World as Prepared Environment," I thought, "Now that is a subject worth meditating on." I can think of several directions in which to take this theme, but as I can follow only one with you today, David asked that I make this talk a personal journey through my research. So, that is the direction I will follow. I will talk about

*Louise Chawla is a professor in the College of Architecture and Planning at the University of Colorado, where she is a member of the executive committee for the Children Youth and Environments Center for Research and Design and coeditor of the Children, Youth, and Environments journal. Louise Chawla's interest in children's informal learning in their communities led her to a master's degree in education and child development from Bryn Mawr College, followed with a doctorate in environmental psychology from the City University of New York. She has written widely on children and nature, children in cities, and the development of environmental activism. Her publications include the books *In the First Country of Places: Nature, Poetry and Childhood Memory* and the coauthored collection *Growing Up In an Urbanising World*.*

*This paper was prepared for the NAMTA Conference titled *Deschooling Montessori* January 25, 2002, in Scottsdale, AZ. Reprinted from *The NAMTA Journal* 27.3 (2002, Summer): 131-148.*

my research as it relates to children and nature, and relate it to my understanding of Montessori ideas and practices.

Preparing for this talk turned out to be a revival of time past for me. In the process, I saw new patterns in my work that I hadn't seen before. I began by digging into the back of a cupboard to retrieve my notebooks and notes from my training as a Montessori nursery and elementary school teacher when I was in my twenties. I had discovered Maria Montessori's books shortly after I graduated from college with elementary school certification, and I decided that I wanted to try this way of teaching. Because I was bound by the circumstances that I had a baby, a husband in graduate school, and a family to take care of and support, the only practical option for me was to study through the St. Nicholas Training Centre. During this time I lived in Pennsylvania: first in Philadelphia and then in Bryn Mawr, not far from West Chester College, where Miss Homfray and Miss Child came regularly from England to do St. Nicholas training sessions. They had worked with Maria Montessori in England, and for my correspondence teacher between their training sessions, I had a Scottish woman, Miss Morrison, who had also worked with her, and who I was told was the first person to introduce the Montessori method to Scotland. So nevertheless, I had the good fortune of being taught by people who were themselves taught by Maria Montessori. I also did observations at Ravenhill Academy in a truly inspiring Montessori classroom, and attended lectures there. After completing primary school certification, I found a job in a private Montessori school named the Walden School, and the director there encouraged me to go on for elementary school certification.

So I pulled out from the back of the cupboard my notebooks and notes from this distant period, and the folder with the handmade sandpaper letters and copies of the plant and animal kingdom cards and booklets that I had drawn. I was reminded of what demanding standards you are held to as Montessori teachers.

Here is the beginning of my elementary program notebook, evidently notes on a lecture by Miss Child:

Dr. Montessori: Absolute integrity with regard to children
A vagrant on the face of the earth
A working girl—no family money



Maria Montessori observing at St. Otteran's School, Convent of Mercy, Waterford, 1927

This caught me up short. I don't think of Dr. Montessori as a vagrant—and you probably don't either. But then I thought of some people whom I know from my work with the United Nations: Stephen Lewis, for example, when he was deputy director of UNICEF—a deeply principled public servant. It *is* a life of vagrancy that these people lead as they travel from place to place wherever they are needed. They sacrifice the comforts of home and a settled, private life in service to their ideals.

Here is the next paragraph at the beginning of the notebook:

During the 1930s on odd year winters, Dr. Montessori gave lectures and Miss Child and Miss Homfray tried to translate her philosophical concepts into material. Dr. Montessori: "I don't want to use the material until it is complete." Miss Child: "Well then, my dear, you will never use it."

I imagine that many people think of the Montessori method as something static—but it is the essence of Maria Montessori's work that the primary foundation of teaching is observation, and listen-

ing, and responding freshly to the needs of the child, wherever it takes you. In reading some of her books again, I am impressed by the voraciousness of her intellectual curiosity. If she were still alive, I am sure that she would be following the latest scientific and social developments on many fronts, and continually evolving her plan for Cosmic Education.

I will close this introduction with a few small quotations from the notebook, which made me think of you as Montessori teachers, with some awe. From Miss Child's lecture: "Of ultimate importance: Through the subjects, children exercise noble parts of their personality. Compassion. Wonder."

And two brief quotations that I had copied out from *Spontaneous Activity in Education*: "The vision of the teacher should be at once precise like that of the scientist, and spiritual like that of the saint" (137).

I read that and thought, "Well, you have your work cut out for you!" And last, a brief statement that can bear much pondering: "The judgment of love is the judgment of knowledge."

In reviewing this material, I discovered that when I assumed that my life had taken a path entirely independent of Montessori teaching after I had left it, I was in fact mistaken. I realized that my work has never gone as far from Montessori principles as I had thought. I will return to this point at the end of my talk.

While I was teaching in the Montessori elementary program, my husband urged me to go on to graduate school myself. It was only fair, he said, that if he were in graduate school, I should have a chance to go too. So I walked over to the college on the next hill from our home, which happened to be Bryn Mawr College, and applied to their program in education and child development. I did it primarily to please him, I have to confess, because I was so busy with teaching and taking care of a small child and a household that I had little time to think of anything else. But I was accepted into the program, and then they offered me a fellowship if I would teach in their lab school while I took classes, and so I left Montessori teaching behind.

What captured my interest during my first year in graduate school was a lecture by someone who had been a friend of Edith Cobb. Edith Cobb had collected more than three hundred autobiographies (later deeded to Columbia Teacher's College), which she studied with special attention to childhood memories. As she summarized a central idea of her discovery in a book and article titled *The Ecology of Imagination in Childhood*:

In my collection of some 300 volumes of autobiographical recollections of their own childhood by creative thinkers from many cultures and eras, ranging from the 16th century to the present, it is principally to this middle-age range in their early life that these writers say they return in memory in order to renew the power and impulse to create at its very source, a source which they describe as the experience of emerging not only into the light of consciousness but into a living sense of a dynamic relationship with the outer world. In these memories, the child appears to experience both a sense of discontinuity, an awareness of his own unique separateness and identity, and also a continuity, a renewal of relationship with nature as process. (539)

My curiosity was aroused. Because creative thinkers influence the development of their societies, if this statement were true, then their childhood experience of the outer world will have an influence far beyond the individual.

It is a canon of science that knowledge should be continually challenged and re-examined—not just unquestioningly received—so I set out to examine these ideas for myself.

As soon as I completed my masters in child development, I transferred to the Graduate Center of the City University of New York for a doctorate in environmental psychology in order to focus on children's experience of the physical world. In taking this step, it was not only Edith Cobb's work that drew me, but also my experience in the Montessori elementary school. As the teacher with special responsibility for science and social studies, I was often outdoors with the children on field trips into the long grass and creek that bordered the school, or across the creek into the woods, as well as on excursions to workplaces around the town. So the children talked with me about their experiences in the woods and creeks and towns

around their homes, too. And they often wrote about this out-of-school side of their lives when they did free writing. They led me into an increasing interest in what they were learning beyond the boundaries of formal education. And now here was Edith Cobb saying that this relationship with the outer world in childhood is the source of “the power and impulse to create” in later life.

When I arrived in New York, I visited Cobb’s collection of books at Columbia Teacher’s College—and I noticed that it was a very selective collection. It primarily recorded nineteenth century European childhoods by authors who made their names in the world in some field of the arts. So I set out to try out her ideas—which she claimed were universal—on a random sample of contemporary autobiographies that was stratified to include people in business, politics, science, technology, and religion as well as the arts.

What I found was that only people who made their way in the world in the arts, or who were committed amateurs of the arts, recorded the type of relationship with the outer world that Cobb described.¹ Why this was so, a retrospective review like this cannot determine. Is it because these people begin life, from earliest childhood, already especially attuned to notice the physical sensory environment? Or are they encouraged to notice their surroundings with respectful attention by cues and examples from people around them that they themselves can no longer recall? Or is it that the arts are the only field of endeavor that validates such an attention to the sights, sounds, smells, touch, and dynamic movement of the outer world, as well as people’s emotional response to it, so that it is only in this realm that people are encouraged to preserve these memories, or at least to write them down?

I also did not find that these memories were confined to middle childhood, as Cobb had declared. Some people recorded significant memories of the outer world that they could positively date to their preschool years. For a number, adolescence was still a time of transformative discovery.

¹For a sampling of the author’s work on the subject, see Chawla, “The Ecology of Environmental Memory” 34-42 and “Ecstatic Places” 18-23.

I did find, however, that among the authors who recorded these memories, the natural environment was the lure and allure that aroused their spirits, in the way Cobb proclaimed. In my own sample of thirty-eight contemporary autobiographies, fifteen people described memories of the kind that Cobb highlighted. In each case, the place that they recalled was in a field, or woods, or an overgrown corner of weeds, or along the seashore—or in the few cases where they were in a room or on a city street, in a place awash with the light and atmosphere of the natural world. The legacy that they most frequently attributed to these childhood experiences, however, was not the impulse for creativity. They reported many creative impulses of many kinds all across the course of their lives. Repeatedly, what they said these memories provided was a base of calm and stability on which they could later draw.

Here are two passages to give you a sense of these childhood experiences. The first is by Howard Thurman, a fatherless African-American boy who later became a minister and an amateur painter. As a child, he walked the mid-Atlantic seacoast by day and by night, during murmuring stillness and wild storms: “I had the sense that all things, the sand, the sea, the stars, the night, and I were one lung through which all of life breathed. Not only was I aware of a vast rhythm enveloping all, but I was a part of it and it was a part of me” (226).

These experiences, he concluded: “. . . gave me a certain overriding immunity against much of the pain with which I would have to deal in the years ahead when the ocean was only a memory. The sense held: I felt rooted in life, in nature, in existence” (8).

Although many of these places were woods, coastline, or city streets where children could roam expansively, not all of the settings were large. Phyllis Theroux, a writer, recalled the clump of weeds that grew beside her childhood sleeping porch, which were set afire by the sun each morning:

“Cockleweeds” is their proper name, although I thought they looked like bumblebees quivering on harp wires, their papery husks dangling in a bright swarm, which trembled in the morning sun. They were golden, translucent, amazing sheaves of wheat. The light drove down the shafts of the stalks, making a cool fire of the dew that collected at

the roots. My eyes would contemplate the cockleweeds without searching for the adjectives that even now elude me. I would simply hang off the mattress, staring at the sight, getting my bearings, not knowing why. (54)

She explained the effect of the experience in this way:

Could it be, and this is the question of a speculative, unmarveling adult, that every human being is given a few sights like this to tide us over when we are grown? Do we all have a bit or piece of something that we instinctively cast back on when the heart wants to break upon itself and causes us to say, "Oh yes, but there was this," or "Oh yes, but there was that," and so we go on? (55)

If you want to find more records of experiences of this kind, the books *Visions of Innocence* by Edward Hoffman and *The Original Vision* by Edward Robinson contain many examples.

What are the implications of these experiences for your teaching?

I think that they accord with Maria Montessori's principle that many of the deepest forms of learning occur in the child's spontaneous encounter with the environment, and that the greatest service that a teacher can do is to provide opportunities for these encounters. Certainly, they point us to her recommendations for the Erdkinder, for providing an environment in the midst of nature where



Sèvres, France, around 1935, courtesy of Margot Waltuch collection

adolescents can live at all times of day and night, in all weathers, where they can be with others and also find corners to be alone in undistracted encounters with their place itself. They also reaffirm the importance of schools with permeable margins between indoors and outdoors, like the garden life of the early *Casa dei Bambini* in Italy or *La Maison des Enfants* in Sèvres, France, or the beckoning natural beauty of Kodaikanal, India, where Mario Montessori and Lena Wikramaratne recalled that most of the lessons were done outdoors (Kahn 1979 and Swedish paper). Kahn reports that Margot Waltuch, who was at *La Maison des Enfants*, recalled that the teachers there used to laugh and say, "There is never any bad weather, only wrong clothing." These experiences also confirm the importance of flexible schedules, which allow a teacher to leave a child rapt in communion with the world.

As a young teacher, I once visited a Montessori school in the South—an elite academy surrounded by a large beautiful landscaped campus. The headmistress informed me that the children were never allowed to go outside. Their parents sent them to the school to learn, she said, and so they stayed at their work with the Montessori materials and did not have time to waste outdoors. I hope that this abuse of the Montessori method lived and died with that one woman.

The fact that it was only people involved in the arts in some way, as professionals or amateurs, who recorded these ecstatic memories, points to the importance of the arts as well as the sciences in the curriculum. It is the arts that encourage not only the close observation of the natural world, but that also validate a personal emotional response: a sense of place in which, in Howard Thurman's words, "I was a part of it and it was a part of me." Or in the words of the poet C. Day Lewis when he recalled "the ravishing sense of peace" which suddenly flooded him as he sat on his boarding school lawn: "The truth of flesh and spirit, sun and clay / Singing for once together all in tune!" (121).

If this autobiographical research suggests that nature is the prepared environment that fosters this intense sense of cosmic harmony—a sense of the world which was such an important element of Maria Montessori's larger goal for education—then other research emphasizes

that it is nature and culture together that give these experiences their meaning. When I was doing research on Edith Cobb, I interviewed a friend of Cobb's, the poet Elizabeth Sewall, who noted that Cobb was deeply influenced by Wordsworth and her own experience of the English countryside. Wordsworth left an undeniable indelible stamp on ideas about children and nature, I reasoned, but the Lake District in which he grew up in the eighteenth century is far removed from children's worlds today. So I set out to talk with contemporary poets about their own use of their childhood memories of the natural world, and what they thought of Wordsworth's ideas.

This work became a book, *In the First Country of Places: Nature, Poetry and Childhood Memory*. What I found was that it was only people who believed that the natural world has an intrinsic moral meaning who were able to accept their childhood sense of oneness with an animated world as a period of insight. For those who believed that the universe is a stream of random events that is ultimately alien to our human constructions and aspirations, their childhood sense of a responsive, animated universe appeared at best irrelevant to their work, at worst an illusion to mock.

This view of the universe as a consequence of meaningless, random combinations of matter and energy, on which people project any meaning they choose, dominates contemporary secular culture and underlies the emphasis on self-gratification through endless new forms of material consumption that drives our economy. Your students are certain to hear its voices all around them from a very young age. This view of an amoral universe is at odds with the sense of nature that inspired Maria Montessori's work. I doubt that you will be successful if you seek to pass on her ideas just as she left them, as the antidote you offer your students. On the one hand, she was acutely aware of contemporary risks—to such a degree that all of her work can be seen as her response to a sense of crisis. On the other hand, she held to a belief in a divinely guided grand march of progress that runs from natural history and evolution through human history and innovation, such as the view she expresses in *To Educate the*

There is no prepared environment in the Montessori method without a teacher somewhere in it, watching for the opportune moment to direct attention, name, distinguish.

Human Potential. Although many people in her generation shared this belief, it was already shredding under the bombardment of two world wars. More and more brutal forms of warfare, growing social disparities, and gathering environmental catastrophes make this faith in progress appear more and more questionable.

I expect that by adolescence, many of your students will question this faith. In this respect, you will have to go beyond Dr. Montessori—as I believe that she would have gone beyond where she herself left her ideas, if she lived today. You will need to stay alive to the active debates underway in science, philosophy, and religion that are seeking to secure a renewed spiritual understanding of the world, so that you can help your students find their own way through.² There is always new work to do, to combine the precision of a scientist with the spirituality of a saint!

My work on autobiographical memories of childhood led me next to interview environmentalists about their self-understanding of what motivates their care for the natural world and their efforts to protect it (“Life Paths into Effective Environmental Action” 15-26). Once again, I found a combination of nature and culture. When I interviewed thirty environmental activists in my home state of Kentucky and twenty-six in Norway about the sources of their commitment to their work—men and women who worked on a wide range of issues—I found that two answers predominated: well loved natural areas in childhood, and family members who drew attention to the value of the natural world. In each case, more than three-quarters of the sample named each source. Only a bit over a third mentioned formal education, and in this case, it was usually higher education. The places where people described forming a bond with the natural world were always part of the regular rhythm of their lives in childhood or adolescence: the garden or nearby lake or forest where they played, the cabin or farm that they repeatedly visited on vacations, a favorite hiking trail. More reason to practice Maria Montessori’s ideas about Erdkinder and Children’s Houses where life spills freely into the out of doors in all weathers.

² You can find an introduction to some of the leading voices in these debates in Barbour, *Religion in an Age of Science*; Griffin, *The Reenchantment of Science*; Huchingson, *Religion and the Natural Sciences*; and in a BBC-TV video series on contemporary science and religion named *Soul*.

When I said that as often as a special place, people spoke about family members who drew their attention to the value of the natural world, I chose my words carefully. I didn't say "family members who told them to protect the natural world." The vulnerability of the natural world in the face of human threats, and the importance of preserving it, was usually a conclusion that people came to later in life through other means. What these family members gave them was simply the example of noticing the natural world as something *worth noticing*. As one woman reminisced, when she was growing up in Norway in the 1950s, everyone was out hiking, picking berries and fishing. "But my mother knew the names of the plants more than other mothers did. So we talked more deeply about things. We didn't only fetch berries and fish, but talked about it." As one man noted, many people were growing up on the land in Kentucky when he did, and some of these people became his fiercest opponents when he later fought to halt the damming of the wild and scenic Red River and the flooding of the Red River Gorge. "Maybe a lot has to do with who you go fishing with," he reflected, "Or who you are talking to when you're walking." In his case, his father showed him not only how



Moveable rocks offer children an irresistible urge to explore and discover lives underneath. Courtesy of Robin Moore and Nilda Cosco

to find fishing bait under rocks, but also just to “appreciate what’s there.” When a thunderstorm was passing by, his father would take him out on the porch to admire the storm’s power.

These results are in harmony with Maria Montessori’s emphasis on the importance of drawing attention, indicating, naming, distinguishing...while letting a child, over time, come to his or her own conclusions. “It is the quality of our attention which reveals ourselves,” she wrote in *Spontaneous Activity in Education*. “The individual character, the internal form, the difference between one man and another, are also obvious among men who have lived in the same environment, but who from that environment have taken only what was necessary for each” (160).

Some things, it can be argued, are necessary for all—including an attentiveness to the natural world on which the well-being of our lives depends, and attentiveness to the many different life forms whose well-being, more and more, depends on our understanding and caretaking. There is no prepared environment in the Montessori method without a teacher somewhere in it, watching for the opportune moment to direct attention, name, distinguish. So, it seems, children’s encounters with the natural world need such a model who draws attention to what is there with watchful appreciation rather than fear or aggression. More research is needed, to compare children with and without the combination of access to nature and role models of appreciation, but this is the conclusion that a series of studies now suggest.³ This formula of free time in the natural world, with adults who model respect for it, as the basis for lifelong fascination and care for nature, is also the recommendation of Rachel Carson in her book *The Sense of Wonder*, and of Sara Stein in her recent book *Noah’s Children*.

These results led me to wonder about children who have no access to the natural world. How can they too form a connection with their place that leads them to a commitment to protect or improve it? More recent research that I have been doing in this area brings us, I believe, full circle, to ponder anew the significance of Maria Montessori’s work in the first *Casa dei Bambini* in Italian tenements.

³ See Chawla, “Significant Life Experiences Revisited” and *Growing Up in an Urbanising World*.

In 1994, I had the idea of reviving a project called “Growing Up in Cities,” which was initiated by the urban planner Kevin Lynch in 1970, as a means to understand children’s perception and use of their city environments, and their own ideas and priorities for improving their communities. With primary support from the MOST Programme in the Social Research Division of UNESCO, the project has taken off with more visibility and vitality than ever before. For the first phase of the project revival, I was able to assemble a team of researchers, urban designers, and community development activists who worked in eight countries around the world. Since then, the number of project sites has continued to spread, and with two books recently off the press, *Growing Up in an Urbanising World* and *Creating Better Cities with Children and Youth*, we hope that more and more communities will take up our ideas.

The project’s ideas, I realized only as I was preparing this talk, are in many respects similar to Maria Montessori’s principles. It is action research, and so we begin with research: listening, observing, letting children show us how they use their local environment and what they value, what they fear, what they would like to change. From this foundation, we aim to work with children as partners to implement the physical changes, programs, or processes of public education that will respond to children’s own perception of their needs. In these activities, we involve the children in talking, writing, drawing, mapping, counting, and many practical exercises in response to their own interests. Most often, we have worked with ten- to fifteen-year-olds, but in some locations, the project has involved eight- to eighteen-year-olds. All of us believe that younger children can be engaged in this process too, if it focuses on the immediate living environment that is vital to them.

The project has developed in response to the changing shape of children’s worlds today—which is the world of your students too. This is where I will leave you in conclusion. We focus our work in low-income urban areas, and work in low-income countries as well as the industrialized North. Why? Because this is where most children of the world live. As Kofi Annan, Secretary General of the United Nations, described the world today in his millennium report *We the Peoples*, if we imagine today’s world as a global village

inhabited by 1,000 people, 780 live in low-income areas and 390 are less than twenty years old. Of these young people, three-quarters live in the low-income neighborhoods. We can add that increasingly, this is where the world's children are being born. More than 95% of the new children coming into the world today are born in the developing world. Meanwhile, less and less of the world's wealth and economic investment is going to these parts of the world, with the exception of China. Within countries and between countries, economic disparities are growing. At the same time, the world is becoming increasingly urban, which means that people are more and more distant from the natural world. This is happening while report after report indicates that the ecosystems of the world are fraying, so that it is increasingly urgent that people understand how to work *with* the dynamics of nature rather than against it. To use the words of Edith Cobb, societies everywhere need "a renewal of relationship with nature as process" (539).

The judgment of love is the judgment of knowledge.

It is a tall challenge, to turn the destructive directions of contemporary society around in order to create a better world for our children and their children's children. Like the Italian tenement where Maria Montessori was called to work, global society is like a band of mad children who are tearing their own house apart. The values that a Montessori education represents are urgently needed today.

Of ultimate importance, Maria Montessori taught, is that children exercise the noble parts of their personality. Compassion. Wonder. In the Children's House, let them first know a friendly world, which they can love, admire, and feel at one with. Where they can claim special places in the natural world and learn to notice this world's value. I agree with the dictum of the educator David Sobel in his book *Beyond Ecophobia: Reclaiming the Heart in Nature Education*: "No tragedies before fourth grade" (10). Let children begin by encountering the natural world with empathy and delight. Sobel quotes the naturalist John Burroughs, who cast light on one potential reading of Maria Montessori's statement that "the judgment of love is the judgment of knowledge." "Knowledge without love will not stick," said Burroughs. "But if love comes first, knowledge is sure to follow" (10).

In the elementary years, as children learn about world history and cultures, be sure that they are given rich materials about Latin America, Asia, and Africa, where most other children of their age live. If you have not already done this, I urge AMI to develop a system of sister schools, through which schools in privileged areas can adopt a program in disadvantaged areas of their own country or disadvantaged parts of the world, and at whatever scale they can manage, share resources, materials, training, and exchanges, so that students and staff can come to know people in another part of the world as individuals and friends. In doing so, never think that you have all the resources, and that *you* are giving to *them*, who lack any. Initiatives in international development succeed only when they are based on trusting human relationships, and people in these relationships always testify that they gain on both sides.

By adolescence, young people can originate and carry out many creative schemes in cooperation with others of their age in their own communities, other communities, and other countries. Depending on the young people's own interests, they can help build schools and children's centers, stock libraries, plant gardens, upgrade communities, turn vacant lots into parks, and renew natural areas.

Adolescence is a "sensitive period," Maria Montessori wrote in her chapter on Erdkinder in *From Childhood to Adolescence*, "when there should develop the most noble characteristics that would prepare a man to be social, that is to say, a sense of justice and a sense of personal dignity" (101). One of the great discoveries of the last decade is that the protection of the natural world depends upon justice even more than it depends upon treaties, regulations, and technological innovations. It depends upon helping the people who live in vulnerable areas of the world, whose livelihoods depend upon these regions, to have the education, skills, and sense of power and responsibility that they need to sustainably manage the places where they live and to protect their surroundings from outside exploitation (United Nations Development Programme et al., 2000).

For many reasons, education is the cornerstone of this process—an education that fosters faith in oneself and in people's sense of their own powers to observe and manage their land. It is also critically

about what Maria Montessori herself epitomized: the education of girls and women. All over the world, when women are educated, they show that they want to provide a good quality of life for a few children rather than to bear child after child. In the industrialized world, there is an equally urgent need for an education that shows that the richness of personal and cultural development exceeds the value of the endless acquisition of more and more material things. The fate of our earth depends upon our making the transition to these new values as quickly as possible. Only then will we be able to halt our ongoing destruction of the ecosystems on which our lives depend. This sense of justice, sense of responsibility to care for our place, and investment in personal and cultural development are the values of a Montessori education.

Children and adolescents can be active members of this process, with creative ideas of their own to contribute. To open the classroom out into the natural world—that is wonderful. To help young people become creative agents in their societies—that is wonderful, too. Just make sure that before your students graduate from their school as adolescents, they have learned that the natural world on which they depend is ultimately this planet, and that the citizenry that they belong to is ultimately humanity.

REFERENCES

- Annan, K. *We the Peoples*. New York: United Nations Publications, 2000.
- BBC. *Soul*. Three part video series. London: BBC-TV, 1992.
- Barbour, I. *Religion in an Age of Science*. New York: HarperCollins, 1990.
- Carson, R. *The Sense of Wonder*. New York: Harper and Row, 1956.
- Chawla, L. "The Ecology of Environmental Memory." *Children's Environments Quarterly* 3.4 (1986): 34-42.
- Chawla, L. "Ecstatic Places." *Children's Environments Quarterly* 7.4 (1990): 18-23.

- Chawla, L. *In the First Country of Places: Nature, Poetry and Childhood Memory*. New York: State University of New York Press, 1994.
- Chawla, L. "Significant Life Experiences Revisited." *The Journal of Environmental Education* 29.3 (1998): 11-21.
- Chawla, L. "Life Paths into Effective Environmental Action." *The Journal of Environmental Education* 31.1 (1999): 15-26.
- Chawla, L. (Ed.) *Growing Up in an Urbanising World*. Paris/London: UNESCO Publications/Earthscan Publications, 2002.
- Chawla, L. "Manifold Ways of Being in Nature in Childhood." In P. Kahn and S. Kellert (Eds.), *Children and Nature*. Cambridge, MA: MIT Press (2002): 199-225.
- Cobb, E. "The Ecology of Imagination in Childhood." *Daedalus* 88 (1959): 537-548.
- Driskell, D. *Creating Better Cities with Children and Youth*. Paris/London: UNESCO Publications/Earthscan Publications, 2002.
- Griffin, D. R. (Ed.). *The Reenchantment of Science*. Albany: State University of New York Press, 1988.
- Hoffman, E. *Visions of Innocence*. Boston: Shambhala Publications, 1992.
- Huchingson, J. E. (Ed.) *Religion and the Natural Sciences*. Fort Worth: Harcourt Brace Jovanovich College Publishers, 1993.
- Kahn, D. "The Kodaikanal Experience." *The NAMTA Quarterly* 5.1 (1979): 46-59.
- Kahn, D. (n.d.). "The Child and Nature: 'Set the Children Free.'" Unpublished paper presented in Sweden.
- Lewis, C. Day *The Buried Day*. New York: Harper and Brothers, 1960.

- Montessori, M. *To Educate the Human Potential*. 1948. Oxford: Clio Press, 1989.
- Montessori, M. *From Childhood to Adolescence*. 1948. New York: Schocken Books, 1973.
- Montessori, M. *Spontaneous Activity in Education*. 1917. New York: Schocken Books, 1965.
- Robinson, E. *The Original Vision*. New York: Seabury Press, 1983.
- Sobel, D. *Beyond Ecophobia*. Great Barrington, MA: Orion Society, 1996.
- Stein, S. *Noah's Children*. New York: North Point Press, 2001.
- Theroux, P. *California and Other States of Grace*. New York: William Morrow, 1980.
- Thurman, H. *With Head and Heart*. New York: Harcourt Brace Jovanovich, 1979.
- United Nations Development Programme, United Nations Environment Programme, World Bank, and World Resources Institute. *World Resources 2000/2001: People and Ecosystems: The Fraying Web of Life*. Washington, DC: World Resources Institute, 2000.

