The NAMTA Journal

Back To The Future

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Table of Contents

Back To The Future: Why Montessori Still Matters ……..…….…….7
Molly O'Shaughnessy

The Return to Scientific Pedagogy: Embracing Our Roots and Responsibilities…….33
Jacqui Miller and Kimberlee Belcher-Badal Ph.D.

In Remembrance……..……..……...53
Deborah Bricker

Tribute To Annette Haines……..……..……....56
Robyn Milos

Tribute To Kay Baker……..……..…….... 59
Gregory MacDonald

Tribute To Joen Bettmann……..……..……..62
Jennifer Shields

Guided by Nature…….……..…….……..……..66
Jacquie Maughan

The Child In The World Of Nature……..……..……..69
Lena Wikramaratne

Sowing The Seeds Of Science: Our Gift To The Future……...78
Audrey Sillick

Experiences In Nature: Resolute Second-Plane Directions…….……...88
Toward Erdkinder
Gerard Leonard and Kathleen Allen

Ecopsychology: How Immersion in Nature Affects Your Health…….107
Toward Erdkinder
Jim Robbins

Silence and Listening ……..……...……..…….…….115
Gerard Leonard

About The Importance And The Nature Of The Silence Game……..……...…….. 117
Dr. Maria Montessori

Meditation on Silence……..……..…….121
Mario M. Montessori

The Silence Lesson……..……..…...……....126
A.M. Joosten

The Nature and Theory of Silence Activities in the Children's house……..……..……..……..130
Mary Black Verschuur Ph.D.

Lecture 19: Analysing Sound and, and Appreciation of Silence……..……..……...……....143
Dr. Maria Montessori

A Tribute To David Kahn……...…….……..……....151
John McNamara

Namta–Ami Legacy: Windows of Change 1975-2020……..……....155
David Kahn

Preface

The NAMTA Officers

Creating and assembling the final volume of the NAMTA Journal has been a sadness and a joy, a revelation, a responsibility, a collaboration, and a reminder of the good work of NAMTA over its lifetime. The work on this Journal and the selection of articles are a reflection of the approach NAMTA has taken in serving our membership. Classic topics and articles, wisdom and new ideas, warm trusted voices of Montessori and new exciting points of view, care and respect for the child and those responsible to the child have all been themes of NAMTA's work both in conferences, workshops, and in our publications.

The themes featured in this Journal are more important to our lives than ever before and highlight the importance of returning to the essential as we navigate the new and sometimes unknown, and they show what is sustaining and what we crave as we tackle the challenges presented to us over the year 2020. Nature, silence and listening, movement and music, friendship and guidance and appreciation: these are our legacy and our future, our common needs, whether we are the young and new or the older and experienced. At one end of the continuum these are themes that allow natural development, and at the other side of the continuum these give us contemplative pleasure and hope.

The search through NAMTA's collection to select the articles for reprinting in this edition reminded us of the wealth of knowledge in those NAMTA Quarterlies and Journals. This collection includes interviews, reprinted lectures, new lectures, practical ideas; it includes voices from the past and voices of the present and those we will be listening to in the future. We were proud to see the depth and breadth of

ideas represented in NAMTA's history. We would like to suggest that you take advantage of the treasure trove that is the NAMTA collection.

Each member of the NAMTA board contributed to this final Journal. It meant a great deal to us that this edition met the standard we had set ourselves and that it be a worthy contribution to the collection. We have derived great satisfaction and pleasure from our work in NAMTA. We all thank John McNamara for the heartfelt appreciation to David Kahn, the hero of the NAMTA story.

The times we are living through confirm for us that we must be creative and adaptable through unexpected and unprecedented changes the past year has presented to us. Thankfully, it is foundational to our work that we believe these are characteristics of human beings. We have adjusted and experimented to find the best ways to continue to serve the development of children and offer support to the adults who love and guide them.

We offer to you this Journal to comfort with our legacy and to inspire with our vision. NAMTA is not its board or its executive director; NAMTA is its membership. The NAMTA board is grateful to its thoughtful and loyal members for supporting this organization for the last 50 years. Thank you to all of you for the work you have done, the work you are doing, and for the work of the future.

Deborah Bricker, Gerard Leonard, Jacquie Maughan, Molly O'Shaughnessy, Sarah Werner-Andrews

Back To The Future

BACK TO THE FUTURE: WHY MONTESSORI STILL MATTERS

Molly O'Shaughnessy

THE RETURN TO SCIENTIFIC PEDAGOGY: EMBRACING OUR ROOTS AND RESPONSIBILITY

Jacqui Miller and Kimberlee Belcher – Badal, Ph.D.

Back To The Future: Why Montessori *Still* Matters

Molly O'Shaughnessy is an accomplished AMI trainer as well as a consultant and lecturer. She has led the Montessori Training Center of Minnesota (MCM) for 20 years of expansion, growing a teacher training center into a movement to bring high-quality Montessori education to hundreds of underserved children. In 2008 O'Shaughnessy opened MCM's campus in the Payne-Phalen neighborhood in East St. Paul. The campus includes an early childhood center, a teacher training center, and a one-of-a-kind Montessori museum. Additionally, MCM partners with Cornerstone Montessori Elementary School, a separate charter serving children kindergarten through sixth grade. Through a pilot program called Montessori Partners Serving All Children, O'Shaughnessy helped launch ten other Montessori schools in under-resourced neighborhoods. She has served on the board of the AMI in Amsterdam, was a long-time member of the AMI Trainers Group, and is currently a NAMTA board member and a member of the Montessori Leaders Collaborative. She has a Master's degree in Education from Loyola University in Maryland and a Bachelor's degree from the College of St. Scholastica. She serves as Community Faculty for Metropolitan State University and adjunct faculty for St. Catherine's University.

Back To The Future: Why Montessori *Still* Matters

Molly O' Shaughnessy

Now more than ever, our work needs to be revitalized around the social question of the child. We must be duly attentive to the relationship of the past to the present and to the future. Our work requires action – concrete action, action of the mind, and action of the heart, all embodied in hope. The "radiant future" Montessori talked about is possible if we work collectively with our eyes wide open.

"We find only the world we look for." – Henry David Thoreau

On the eve of the 100-year anniversary of the 1907 opening of the first Casa dei Bambini, I received an extraordinary gift from my students. It was couched in the notion of legacy—of receiving a gift from the past—and of course gifts from the past often have the power to deeply inform our present and our future.

As many of you know, the Montessori movement had a huge revival in this country in the early 1960s. My father, a university professor at the time, was instrumental in establishing the first Montessori school in St. Paul, Minnesota, in 1963. My father's involvement in the Montessori movement, as well as the nation's War on Poverty, deeply influenced me, and ultimately resulted in my taking the first AMI training course in Minnesota in 1973.

It was the beginning of a legacy handed down to me, embedded with incredible opportunities and responsibilities that I was incapable of understanding at the time. I was like many of us who, as we begin down the path of this incredible work, have no clear idea about the fire soon to be ignited within us.

The gift my students gave me was a sculpture of my father's hand as a symbol of gratitude to the long chain of people committed to Dr. Montessori's vision of a new humanity through the creative work of the child. That hand also represented the gift that was given to me over 45 years ago, eventually empowering me to become yet another link in transferring and passing on the legacy of this work to others, and the future work still to come.

In short, the gift represented a link from one generation to the next. The image of connectedness was profound.

The image of the hand in our work is not so much the idea of *giving over as of coming together*—offering each other a direct connection to the soul and the history of humanity. The work and energy of the hand represent the promise of the future.

The inscription included with the hand sculpture came from a book of daily meditations, under the title of "Illumination," and it reads as follows:

> *Fire feeding on fire.*
>
> Everyone understands that burning wood produces fire. But when fire feeds on fire, that is a rare condition that yields the greatest illumination. Two flames come together and yield light more magnificent than either could have given forth alone.
>
> In the case of community activity, this means that when one cooperates with others, the accomplishments are greater than what the individuals can do on their own. Such a situation requires a harmony that will generate ideas, inspiration, as well as momentum for growth and action. If the combinations occur properly, the results will be like fire upon fire and will illuminate the world. (Ming-Dao 1992, 69)

I was 22 when I began my Montessori training, and the depth and breadth of what was to come was barely accessible to me—not even in my wildest dreams. What was avail-

able, and is to most who enter this work, is a flame stirring within us that propels us into a very different, and potent, state of mind—a spiritual awakening.

My trainer on the first AMI course in St. Paul was Mr. Abs Joosten. The depth of his words continues to inspire me today: "This is not merely a question of learning something. It is a question of achieving a revolution within ourselves and of our whole outlook—of our whole attitude and of everything we are."

The work itself was revolutionary—something so radically different than I had ever imagined. Up until then, in my passionate youth, my idea was to change the world, and suddenly I realized that the revolution needed to begin within me. Revolution at its core requires rebellion—both internal and external.

Up until then, in my passionate youth, my idea was to change the world, and suddenly I realized that the revolution needed to begin within me.

More often than not, we think of rebellion as a negative action, but often it positively shakes up closely held beliefs and actions that may be essentially detrimental to life. Internal rebellion requires us to examine our beliefs; our biases, both conscious and unconscious; our motives and behaviors, both personal and societal. External rebellion requires us to take appropriate actions that fundamentally result in meaningful change.

The idea of revolution may bring to mind actions that result in a radical uprising. But in the context of Montessori's ultimate vision, I think the archaic definition of *revolution* is more aptly profound— "a turning over in the mind." What happened to Maria Montessori during her early years of work with children was a "turning over in the mind." She spoke eloquently about a radical change within herself.

Access in Action

In this country, something unfortunate happened to the idealism of the early Montessori movement. Increasingly, Montessori became available only to those who could afford it. More and more communities were left behind. And increasingly, that situation troubled

many of us who had entered this work with a commitment to social justice, equality, and inclusion.

Twelve years ago, a group of like-minded people in our state decided it was time to take action and return to the roots of the Montessori social mission. At that time, there were hundreds of people we did not know, communities we had never been in. And they did not know us or our work at the Montessori Center of Minnesota.

Increasingly, Montessori became available only to those who could afford it. More and more communities were left behind. And increasingly, that situation troubled many of us who had entered this work with a commitment to social justice, equality, and inclusion.

But now we are family. We share a common vision for children, the vision that brought us together. There are so many organizations serving children that share common ground. We need to find each other, to work together, to weave a web so strong that it cannot be broken by anything or anyone.

Our collective vision is to see access in action—for children, for families, for communities, for teacher trainees. True equity requires us to recognize barriers and find ways to remove them. I have come to believe that any vision, by its very nature, must begin with an image of hope. Hope comes in the face of no evidence and is the force that impels the whole of life forward.

It is easy to become consumed with images of horror and destruction. They bombard us every day of our lives. It is easy to fall into despair and hopelessness. We can become so overwhelmed that it causes a kind of paralysis within us. Fortunately, when confronted by such a powerful emotion, the human spirit has the potential to evoke, from within, a positive reaction.

That reaction is a call to action. It is only through action that vision becomes reality. Many social movements have been led by people who experienced despair and oppression, yet were inspired by hope. These people were driven by hope for a change, for a new beginning.

Hope is not simply wishful thinking. Hope must be grounded in reality. For us to proclaim that our vision is "world peace" without any notion of the process and steps required to achieve it makes it unattainable, resulting in cynicism and despair, not hope.

Hope in Action: Montessori Partners Serving All Children

I would like to share some of the realities of our vision and how we have evolved as a community. Many communities around the world have profound stories to share; ours is just one of many. As we recently celebrated 45 years of training, we focused on the last 10, when we intentionally began our journey to collaborate and engage in community around access.

Our core outreach initiative, Montessori Partners Serving All Children, has allowed us to partner with culturally rooted communities to develop Montessori programs led by them within their communities. The MPSAC mission statement reads as follows:

> Montessori Partners Serving All Children is committed to increasing access to high-fidelity Montessori to historically underserved communities. Montessori Partners programs are community-rooted and include schools as well as less conventional educational settings.

I want you to meet a few of the many dreamers, visionaries, and doers whom we have had the privilege of working with toward this goal. Their stories are powerful.

As a beginning, I want to introduce you to Primary trainee Jessica Jackson, J.D., executive pastor of Impact Living Christian Center, Minneapolis, who has a big dream soon to be a reality. Let's listen as she tells her story in her own words:

Pastor Jackson with children. Impact Living Christian Center, Minneapolis, MN. Photo credit: ILCC/Laura Lemieux

My passion for serving comes from my mother. Fifty years ago or so, she started an early childhood center, and I learned from her what it meant to serve the community. And so that drives a lot of the passion.

My vision is to start Morning Glory Montessori, focused on African-American boys. Today we use words like *achievement gap* and *opportunity gap*. They keep us from really focusing on what's happening and who it's happening to. Our children are not faring well, and black boys are struggling the most.

Dr. Montessori talks about helping the child to help himself. The Montessori Center of Minnesota is helping me to help my community. The other people that I'm being trained with are going to do miraculous things in their respective communities. And I just see so much hope being spread, starting from this place.

I am dreaming of a new generation of little African-American boys who love themselves, their families, and their community.

How Action Partners with Hope

Hope remains viable only within the construct of action, and action is multi-dimensional.

Concrete action starts with questions like these:

- What's next?
- How many?
- By when?
- How will I be accountable for the results?

Actions of the mind ask questions like these:

- How do I need to think?
- What do I need to learn to be effective?

Actions of the heart start with questions too:

- Who and how do I need to be to carry the vision forward?

Action is one partner to hope, but it has other partners: connection, commitment, vision. Let's take up each in turn.

How Connection Partners with Hope

Philosopher Lionel Blain wrote, "The fullness of hope can only be found where there is the spiritual interconnection called love" (1970, 94). Without deep connections, it is impossible to move any vision forward in a meaningful way. Deep and sustained connections bring unity and community. Roxana Linares, executive director of one of our partner organizations, Centro Tyrone Guzman in Minneapolis, talks about the importance of connections:

> Centro is a social services agency that focuses on education. We have programs for young children transitioning to school, parents, and elders. When we were approached by the Montessori Center with the opportunity to have our classroom changed and our teachers trained as guides, we said, "Yes, we have been wanting this forever and this is the perfect opportunity!"
>
> 
> Roxana Linares, executive director of Centro Tyrone Guzman. Minneapolis, MN.
>
> The partnership with the Montessori Center of Minnesota has allowed our children to grow their gifts in so many different ways. They are learning a lot of science. They have their own garden and plant fruits, vegetables, and then they eat them. And they are also learning to wash the dishes, to be patient, responsible. The children are so proud, and they love to share what they have learned. Those skills will allow them to continue learning and be very good members of the community and society.
>
> What we have brought as a partner is the emphasis on bilingual and bicultural teaching, so there is a richness of ideas, opinions, points of view that helps the partnership grow because it challenges us all to think about things differently.
>
> I have learned that Montessori can be also implemented in our work with elders, and it has really made a change in how elders are engaged in mean-

ingful work. And that has made them more engaged in conversation, even the ones that have memory loss. It is a gift for us to see them changing that way.

I am sharing how happy I am that families and children have a beautiful environment where children can thrive.

Connection creates the possibility for open and authentic dialogue. We have had many authentic conversations—sometimes difficult ones—in an effort to find common ground. We asked ourselves, "How do we truly engage in community? What does it look like?" The key is to ask community members what their needs are and not assume that you know what is best for them. And listen with the intention of understanding. We must beware of the savior mentality. It is a very easy mistake to make.

True equity looks to all the basic social determinants of health: housing, transportation, food, child care, and so on. How do we help remove all of these barriers? To do so for committed and qualified Montessori teacher training candidates, we partnered with Women United, a giving community at the forefront of the Greater Twin Cities United Way's movement to build stronger communities. These women leaders advocate and fight for the health, education, and financial stability of every person, in every community.

True equity looks to all the basic social determinants of health: housing, transportation, food, child care, and so on. How do we help remove all of these barriers?

Funding from Women United has allowed us to offer training scholarships that go well beyond tuition to cover living costs, transportation, childcare, books and materials, and other expenses. Our trainees also receive academic support in the form of mentorship from experienced Montessori teachers.

Catherine Kennedy and students, Cornerstone Montessori School

A recipient of one such scholarship package, Catherine Kennedy, describes what these supports have meant to her as a newcomer from West Africa:

> The Women United Scholarship Fund has really helped me. The funds allow us to purchase materials, and we are able to use the funds for daily living and resources—however it will best support us in learning and not being distracted by how we are going to be able to buy just the necessities of life.
>
> I signed up for the mentorship program because I'm not able to articulate myself as much as I'd like. My mentor will always remind me that "You will get there. These are the steps that need to be done." And that's the kind of support that I've had through the mentorship program.
>
> We are giving keys to the children. I love that term, *keys*—we are giving them keys. Keys can open doors for opportunities. … I know this [Montessori training] is the key for doors that I don't even know will be open yet. But I am willing to grab this key, run with it, and if the opportunity comes to open that door, I'm going to open it and thank the Women United Scholarship, the MCM staff, and everybody—thank you for the key that you gave me.

How Commitment Partners with Hope

William Hutchison Murray, the famed Scottish mountaineer, wrote, "The moment one definitely commits oneself, then providence moves too" (1951, 7). Genuine commitment springs from a deep and intense passion toward a desired outcome—something one is willing to dedicate one's life to. Maria Montessori's commitment to a social movement around the child has brought us here today as the social revolution continues in its evolution. We are all part of that.

Commitment builds community and unity. A collective focus eliminates cynicism, pettiness, control, and competitiveness. A shared vision requires authentic collaboration and respect for the talents of each.

Commitment builds community and unity. A collective focus eliminates cynicism, pettiness, control, and competitiveness. A shared vision requires authentic collaboration and respect for the talents of each.

Finally, it is imperative to understand that if we are going into a community, we must be fully committed. Underserved communities often witness some person or entity coming in, starting a project, and abandoning the effort. Working with the Thunder Valley initiative on the Pine Ridge Reservation in South Dakota, we were told that this kind of thing happens all the time, resulting in mistrust. Commitment focuses our energies and produces a willingness to live in the question and not become discouraged when roadblocks are placed in our way.

How Vision Partners with Hope

Visionaries start with the end in mind. Our vision begins with children. Children embody the fullest dimension of hope. They are natural inventors and discoverers, with an inner drive toward the future. They possess the power to create a new reality as yet invisible to us. This is why we remain hopeful that our past, present, and future actions will contribute to the evolution of Montessori's revolution in education. Of course, "education" goes well beyond mere schooling. In reality, it is a spiritual and social revolution of the highest magnitude. It represents a transformation of humanity as we know it today. Now more than ever, we need to focus on the goodness of humanity.

Scott Hunt spent three years traveling the world to focus on the best of humanity, interviewing the most notable peacemakers of our time: the Dalai Lama, Jane Goodall, Aung San Suu Kyi, and others. Of these luminaries he writes, "Even in the darkest of times in our history, people of extraordinary character have lived among us, showing us a way out of the cycle of hatred and aggression" (3).

Many social movements such as women's suffrage, civil rights, cultural rights, and child labor laws took many years to be fulfilled. Like those of other successful social movements, our actions must be thoughtful, deliberate, strategic, and courageous. Our vision requires us to step out of our comfort zone, continually asking ourselves, "What results do we want to create?"

Rooted in the word *revolution* is the word *evolution*. Evolution is organic in nature, with the power to bring conditions to a higher, more complex, and better state. The evolution of progress is often slow and may take years or generations—Native Americans speak of seven generations—to succeed. It is vision and faith that empower people to work toward a long-term dream, knowing it may not come to fruition in their lifetime.

Rooted in the word *revolution* is the word evolution. Evolution is organic in nature, with the power to bring conditions to a higher, more complex, and better state. The evolution of progress is often slow and may take years or generations—Native Americans speak of seven generations—to succeed. It is vision and faith that empower people to work toward a long-term dream, knowing it may not come to fruition in their lifetime.

The Montessori movement must continue its evolutionary process, sensitive to the needs and nature of the present, inspired by the knowledge and wisdom of the past. The idea of evolution requires us to learn from our past—to see how deeply connected to it we are. Our current evolution has brought equity, inclusion, and access up front and center, where it belongs. Yet our vision remains an active process—a work still in construction.

Perhaps now, more than ever, our work needs to be revitalized once again around the "social question of the child."

Back to the Future of Montessori

The Montessori movement needs to take its lead from the past—to use a phrase from popular culture, it needs to go "back to the future."

During the destructive war years, the American-British poet T.S. Eliot expressed concern that humans were not duly attentive to the relationship of the past to the present and to the future. He powerfully expressed the interdependencies of time and space, as did Montessori in her often-reprinted lecture "Human Solidarity in Time and Space." The following stanza begins the first of Eliot's *Four Quartets*, titled "Burnt Norton":

Time present and time past
Are both perhaps present in time future
And time future contained in time past.
If all time is eternally present
All time is unredeemable.
What might have been is an abstraction
Remaining a perpetual possibility
Only in a world of speculation.
What might have been and what has been
Point to one end, which is always present.

Often during times of social and political flux, humans tend to look inward for inspiration, guidance, and hope. As we look to "time present and time past," we may recognize that we are once again in a period of flux. Once again, we witness a turning in, a period of deep reflection and accountability for our actions.

"All time is unredeemable." We can't change the past, but we can learn from it, and it can help inform and create our future. The idea of "perpetual possibility" is embodied Montessori's vision of the human potential—that the adult sees in children what is not yet there but what represents the redeemable in them.

The destiny of the Montessori movement is in our hands; it requires concrete action, action of the mind, and action of the heart. It obliges us to be intellectual explorers, social entrepreneurs, and spiritual seekers. It thrives on connections and flourishes when approached with unwavering commitment and steadfast work. Foremost, it requires action.

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Action of the Mind

Action of the mind is twofold. First, it requires our own adult intellectual expansion, as well as better access to our collective intelligence, made evident through collaboration, enhancing our capacity to build the necessary infrastructure to put the vision into meaningful action. And second, it demands our continued fight for justice around the freedom for the child's mind to develop.

Sustained intellectual development on our part, sound organizational systems, and genuine dialogue deepen our ability to protect the child's right to develop his innate genius and spiritual characteristics. These elements are inseparable. Without this protection, the vision becomes unattainable.

Although many of Montessori's ideas have been absorbed into the educational mainstream, some very fundamental ones have not, including the protection of the child's mind to develop fully and creatively. In recent times, at least in the United States, the educational focus surrounds informational or "mechanical" knowledge, rather than nurturing the growth of creative, original, flexible, and innovative thinking. Such an education does not help the child: in the words of American philosopher Eric Hoffer, "In times of change, learners inherit the earth, while the learned find themselves beautifully equipped to deal with a world that no longer exists" (22).

Freedom to develop our minds to the fullest creates a new level of perception, resulting in new mental structures capable of thinking in more profound ways. Closed minds, "utilitarian intelligence," and information-gathering knowledge can never transform society.

If unimpeded, the attuned mind is inspired by the world, by the aesthetics embedded in all aspects of the universe, including science, mathematics, technology, literature, and so forth. The inspired mind is allured by the interconnectedness of all things and develops a moral and ethical responsibility toward the whole of civilization.

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Montessori compared the intense concentration we witness in a child manually involved with a compelling task to the complete state of deep concentration found in great thinkers, who subsequently are inspired to solve the great problems of the world: "This developmentally directed energy marks the beginning of the creative mind. The successful building of this mind depends upon an intelligent and loving assistance on the part of all adults. It requires physical and psychological environments protecting the justice of the mind, freeing it to stay enthralled with the world" *(The Child, 18).*

If we stay enthralled and inspired by the world, we will fight to safeguard it from harm. An inspired mind helps establish a new social order geared at justice and protection of human rights.

Action of the Heart

A creative and flexible mind produces appropriate action of the heart. Only an intelligent heart is open to a new world view, capable of the courageous risk taking required to challenge closely held beliefs that interfere with healthy progress in the world.

A creative and flexible mind produces appropriate action of the heart. Only an intelligent heart is open to a new world view, capable of the courageous risk taking required to challenge closely held beliefs that interfere with healthy progress in the world.

As Montessori reminded us, "There never was a social question as universal as this. No social question was ever called upon to solve the problem of such widespread and indiscriminate oppression as that which weighs upon the child.… The social question of the child … knows no limits of caste, race, or nation" *("The Blank Page," 4).*

To reach a point of collective consciousness, where there is a systemic shift in attitudes and perceptions regarding the child and his function in the world, our efforts must infiltrate the whole of society in all parts of the world. Wherever our efforts require us to go—be it political, economic, or social—it must always revolve around the question, "How are the children doing?" In his book *God's Politics*, Jim Wallis reminds us that in every arena of society—be it educational, medical, social, or economic—if this question can be answered in the affirmative, we will be traveling the path toward reconstruction and healing (29).

The Social Entrepreneur

We will have to work on parallel tracks. This task requires us to work from both the inside and the outside. As we make a concerted effort to expand the availability of quality schools, teachers, and teacher trainers throughout the world, we must also forge partnerships with others working on behalf of children. Dr. Montessori's proactive commitment brought her together with people from all walks of life.

As we make a concerted effort to expand the availability of quality schools, teachers, and teacher trainers throughout the world, we must also forge partnerships with others working on behalf of children.

We have to become, in the words of Bill Drayton, founder of the Ashoka Foundation, social entrepreneurs. Social entrepreneurs are "practical visionaries who possess qualities traditionally associated with leading business entrepreneurs—vision, innovation, determination, and long-term commitment—but are committed to systemic social change" *(cited in Davis 2002, 15)*. "Social entrepreneurs are not content to just give a fish or to teach how to fish. They will not rest until they have revolutionized the fishing industry" (Drayton 2005). "Social entrepreneurs demonstrate the power of building things instead of destroying them" *(Bornstein 2007, 281)*. They know what they are for rather than simply what they are against. Social entrepreneurs are people who thrive on the "how-to" questions, helping to bring an idea out of the theoretical realm into the reality realm *(Bornstein*

2007, 19). Dr. Montessori was recently acknowledged by Ashoka as an historical example of a leading social entrepreneur (*Scheffelmeier 2019).*

Thunder Valley Community Development Corporation (CDC) is a Lakota-run grassroots nonprofit that is building a community as a catalyst to create systemic change on the Pine Ridge Reservation in South Dakota. Thunder Valley takes a multifaceted approach to creating vibrant and healthy communities with the power to create sustainable change and end poverty on the reservation.

The organization was founded in 2007 through spirituality and through a challenge from the ancestors: "When are you going to make a way for your people? Are you not warriors? It's time to stop talking and start doing."

Thunder Valley's first work was to engage a group of young people in building a Community House from the ground up. While this work was important and meaningful, the CDC's founders believed that there was still something missing. When the youth went home, they often were still dealing with issues such as overcrowded homes as well as lack of educational opportunities, access to healthy foods, spaces to hang out and be kids, and economic opportunity for their families.

The Thunder Valley leadership team recognized that it would take systemic change to bring an ecosystem of opportunity for the youth they were working with. They launched into hundreds of hours of listening and visioning sessions with their community. They engaged youth, elders, political leaders, parents, and others to plan a vision for their future. They challenged the community to think about what was possible instead of the challenges that would get in the way.

One elderly woman at a community engagement session said, "That was the best meeting I have been to in my whole life." When asked why, she responded, "No one ever asked me what I wanted for my community, or for my life."

Thunder Valley's plan for systemic change includes education, youth leadership, food sovereignty, Lakota language, housing and homeownership, workforce development, and social enterprise. One such enterprise is the first regenerative chicken farm in Indian Country.

Please listen with me as three leaders in Thunder Valley's Lakota language and culture initiative describe the congruity between the CDC's mission and Montessori education:

Dallas Nelson, Director, Lakota Language Initiative: Thunder Valley Community Development Corporation is a Native-led nonprofit in South Dakota. Our community is one of the poorest communities in the United States. The mission of Thunder Valley CDC is to create systemic change within our community at Pine Ridge Reservation.

Dusty L. Nelson, Primary Guide Trainee: When we teach our language, the elders often say, "This isn't just the language, this is a way of life." Like Montessori, it's creating a culture, reclaiming our sovereignty, reclaiming ourselves, being self-empowered, self-sustained, self-led.

Emily Nelson, Primary Guide Trainee: Having beautiful, handcrafted materials in the environment has inspired me to bring that back to the reservation to the children. It brought in so much learning.

Dallas: Having Montessori implemented within our Lakota Language Nest on the Pine Ridge Reservation, we are enhancing our services, but also, we are going to provide a professional early childhood experience for our children.

Dusty: The foundation of the Lakota thought and philosophy is kinship. A very well-known Lakota saying is *mitakuye oyasin*. It means "we are all related." Those children are going to be the future of that community. Those children are going to uphold that self-sustainability, that self-empowerment. And what better way to go than Montessori?

A very well-known Lakota saying is *mitakuye oyasin*. It means "we are all related."

Dallas: Thunder Valley Community Development Corporation, alongside Montessori Center of Minnesota, will have the power to create positive systemic change within our reservation through Montessori. I am dreaming that our Lakota children 20 years from now will have revitalized the Lakota language and culture.

Increasingly, Montessori's work and her vision for social change are surfacing in a variety of places. But one thing all social entrepreneurs have in common is a tenacious drive to do whatever it takes to get the job done. They recognize the value their work contributes to the whole. When Isaac Newton was asked how he had managed to discover the physical laws of the universe, he answered, "By thinking about it day and night." Dr. Montessori thought about the child day and night. We are the current keepers of that vision and have a tremendous responsibility toward the future.

Collective Action

Our work is both an individual and a collective journey. Advancement and progress of any kind always has connection at the heart of it. People come together around an idea or ideal that moves them deeply and inspires them to take action. Leaders and conveners

emerge, rallying the forces to organize, strategically putting systems in place, and passionately telling the story to inspire others to join the cause.

There is often a personal side or a story that calls people to take action. If we look back through history, we see many examples of such stories. Because, as Eliot's poem reminds us, "time future [is] contained in time past," it is critical that our history be documented and our stories permanently recorded in written form.

These stories and this history embody the core values that keep us connected. Connecting around a vision brings us together. As the vision is put into action, more and more people get involved.

Our collective journey requires reaching out beyond the safety of our Montessori communities. Facilitating partnership opportunities with colleagues in the human rights field, with policymakers, with business and corporate leaders, and with philanthropic organizations will increase the social impact of our work at all levels.

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But without the necessary resources—both financial and human capital—we cannot attain our goal. Financial advancement should be thought of as an investment in the future, a vehicle toward accomplishing our goal. My grandfather, a philanthropist and astute businessman, always said, "Money is like manure: it does no good unless you spread it around." Growing up in a family with strong philanthropic values afforded me the privilege of seeing the goodness that money can provide. It also instilled in me an understanding of the responsibility that comes with it.

Leadership for Change

The heart of philanthropic individuals and organizations revolves around change. They also have a vision of what is possible in the world. They realize that vision requires action, and action requires resources. Many of these individuals support issues regarding children with the realization that, as American psychologist Karl Menninger famously pointed out, "What we do to children, they will do to society."

The foundation that gave MCM the seed money for Cornerstone Montessori—our pilot Montessori Partner School—was the Hiawatha Education Foundation, which designates almost all of its funding toward helping support Montessori schools for under resourced children. Both of the founder's daughters attended Montessori schools and were deeply influenced by them. When they got together as a family to discuss what was valuable to them, they decided to focus on Montessori education for families that cannot afford it. In addition to granting hundreds of thousands of dollars toward scholarships for children, the foundation recently opened its own Montessori Partner School, Main Square Montessori, in Winona, one of the poorest rural communities in Minnesota.

Leaders like these embrace diversities of opinion and thought. Authentic dialogue deepens creativity and the capacity for problem solving, moving the vision in a powerful way. Leaders must also pay attention to their own inner growth. When we look at examples of great champions of social change, the commonalities of character that we witness are respectfulness, reverence, service, and integrity.

Integrity is the glue that holds people and groups together. When we act with the utmost integrity, we are able to build the trust required to act as a cohesive whole. This does not mean that we will always agree on a path of action, but it guarantees that all opinions will be honored and respected. Reverence is at the heart of both leaders and followers. It is central to all of our work. Reverence is the key to connection; it crosses all barriers.

Ripples in the Water

Without connections, without a feeling of community and unity, we will not be called to act. Inspired action of the mind and heart leads to inspired concrete action.

If each of us made one new connection—one ripple in the water—the effect would be phenomenal. In this way, small individual initiatives become widespread and weave themselves into the permanent fabric of society. We have seen one Montessori Partners Serving All Children school grow to ten, with many more in the pipeline. In words spoken by Robert F. Kennedy in a 1966 speech to South African students, now engraved on a plaza at Arlington National Cemetery, "Those ripples build a current that can sweep down the mightiest walls of oppression and resistance."

I invite us to think about our work from this perspective. I invite us to think about the vision as our responsibly, each and every one of us responsible for this movement, being mindful that we can't do it all at once, but as Dr. Montessori said, piece by piece, "sowing seeds, sowing seeds for hope."

The Montessori movement must keep the "evolution" of the "revolution" moving forward in a positive, responsible, intentional manner, always informed by our past, standing on the shoulders of those who came before us. The power of this movement lies in the fact that we do not simply "pass the torch." Instead, the torch continually burns vibrantly within each of us—as fire feeds on fire—brightly illuminating our potent vision of human solidarity.

Victor Hugo wrote, "If you look into the eyes of the young, you see flame. If you look into the eyes of the old, you see light." We need both flame and light. It is the combination of fire and light—energy and innovation graced with wisdom and fortitude—that brings us to the cutting edge of social progress.

We welcome and embrace the spirited flame of the next generation among us. Kindled by the flames of those who came before, you become the new keepers of the vision—the new revolutionaries—those entrusted with and capable of transmitting the legacy of children and their rights into this century and beyond. You are the ones with the "ability to look at a volatile and uncertain landscape, and to see nothing but the bright colors of opportunity" (Ferguson 2005, 40).

We welcome and embrace the spirited flame of the next generation among us. Kindled by the flames of those who came before, you become the new keepers of the vision—the new revolutionaries—those entrusted with and capable of transmitting the legacy of children and their rights into this century and beyond.

In her book *Aquarius Now*, Marilyn Ferguson helps us see the thread of life as continuous, with knowledge from the past illuminating the path of the future. Consider the apparent paradox in this provocative passage: "Remembering the future is nothing more than allowing oneself to imagine it so vividly that it's difficult to discern the vision from the memory. Once we see vividly our faith deepens. We can scarcely imagine failing" (2005, 183).

Only when we can scarcely imagine failing can we move forward, transcending self into the deeper meaning of life—imagining a different world. I know each of us in this room today can scarcely imagine failing, and this is what lights our fire and continues to feed fire on fire. Cherish that light and protect it at all costs.

Finally, I'd like to introduce you to eight attributes that set in motion the ripple effects of our work at the Montessori Center of Minnesota, along with some of our partners and programs that exemplify those attributes: leadership, action, authentic dialogue, vision, creativity, social entrepreneurship, partnerships and collaboration, and hope.

Leadership: *A Cornerstone Montessori School*

Cornerstone Montessori School is a program of the Montessori Center of Minnesota. CMS serves approximately 50 children each year. CMS intentionally serves at least 60% low-income families.

Action: *Siembra Montessori, Centro Tyrone Guzman*

Siembra serves Latine children who have a family income of 200% poverty or below. Centro Tyrone Guzman is a 43-year-old multiservice organization offering programs and services for recent Latine immigrants. Siembra is expanding to serve more children.

Authentic Dialogue: *Montessori American Indian Childcare Center*

The mission of MAICC is to address the early childhood needs and the academic achievement gap of American Indian children through revitalizing the language and culture. Children are exposed to the native culture in all that they see, do, and practice.

Vision: *Morning Glory Montessori*

Pastor Jessica Jackson will be starting an African American Christian Montessori boys' school in the fall of 2020. Her school will focus on cultural and spiritual revitalization.

Creativity: *Birth to Five Early Childhood Program*

MCM's Birth to Five Program extends Montessori to parents/caregivers and children in partnership with Opportunity Neighborhood at the community center of Ames Lake, a low income housing community.

Social Entrepreneurship: *Thunder Valley Community Development Corporation*

An initiative of Thunder Valley is to create fluent speakers of all ages, build confidence around the language, and increase Lakota educational opportunities in the community. Two emerging Montessori programs will support this initiative.

Partnerships and Collaboration: *Cornerstone Montessori Elementary School*

Cornerstone Montessori Elementary School, a separate 501(c)(3) organization, is a K–6 public charter school. In partnership with MCM, the two Cornerstone schools serve 190 children.

Hope: *Hamdi Mohamud*

Hamdi's hope after completing her Montessori training is to establish an educational environment that is uniquely designed to serve the needs of underserved Somali children.

Closing

Hope, of course, is the greatest of these. "Hope is not a feeling. It is a decision. And the decision for hope is based on what you believe at the deepest levels. … You choose hope, not as a naive wish, but as a choice, with your eyes wide open to the reality of the world" (Wallis 2005, 347).

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The Return to Scientific Pedagogy: Embracing Our Roots and Responsibilities

Jacqui Miller was the Founding Principal of Stonebrook Montessori, a public charter school that opened in 2015 in Cleveland, OH. She currently serves the Cleveland Metropolitan School District as the Director of Montessori Programming and Operations engaging in the big work of utilizing Montessori for transformational urban education. Prior to her move to public sector administration, Jacqui was a Montessori guide for 20 years at the elementary and adolescent levels. She was a founding teacher and a leading developer of the Adolescent Program at Arbor Montessori School in Decatur, GA., and was a presenter and coach at the NAMTA/AMI Orientation to Adolescent Studies for 10 years. Jacqui is dedicated to education as a means to social change and community development, and to visionary, collaborative, servant leadership. She holds an AMI Elementary Diploma and has a B.A. in Design. She leverages her privilege and intersectionality to advocate for equity in education.

Kimberlee Belcher-Badal Ph.D. is AMS Montessori trained at the Primary Level. Her training occurred through Chaminade University of Honolulu. Working in both AMS and AMI schools, she earned an undergraduate degree in Early Childhood and Master's degree in Elementary Education. Her Ph.D. is in Curriculum &

Instruction from Indiana University. Today, she serves as the Executive Director for the National Workforce Registry Alliance. A lifelong traveler, Kimberlee has lived in 14 states. She currently lives in Alexandria, Virginia with her husband Mohammed and two elementary age sons. As a military family, they are happy to be experiencing four beautiful seasons and communities rich with cultural diversity. Her professional focus includes studying the preparation of teachers in Montessori, Waldorf, Reggio, and Lifeways classrooms, as well as the integration of arts and culture in the transmission of knowledge. She holds a deep passion for enabling indigenous wisdom to guide community-based, participatory research which prioritizes a community's ways of knowing and informing. She dreams of making Montessori education accessible to Military children and families in an effort to support their optimal development, strengthening resiliency, and nourishing well-being.

The Return to Scientific Pedagogy: Embracing Our Roots and Responsibilities

Jacqui Miller and Kimberlee Belcher – Badal, Ph.D.

"A great social mission that will ensure the child justice, harmony, and love remains to be accomplished. And this great task must be the work of education, for this is the only way to build a new world and to bring peace." ~ Maria Montessori (1)

When Dr. Maria Montessori called on education to be humanity's saving grace, she challenged us to see the world of possibility in children. She endowed teachers with preparation to make visible the child's guiding power, charging the child and teacher as ambassadors to a humanity for which the world is waiting. As the global paradigm shift set in motion by the disruptions of 2020 reinforces and reawakens our interconnectedness and interdependence, the Montessori community must return to its scientific pedagogical roots if it is to contribute to tangible, systemic, enduring social reform. In this 150th year since her birth, we are called not only to celebrate Dr. Montessori's legacy but also to follow her example as scientific pedagogues.

Who We Are Informs What We See

It is necessary, in scientific endeavors, to remain cognizant of our stories, our narratives, our beliefs and what informs them. As teachers, trainers, and leaders, we must reflect on and qualify our ways of interpreting the world around us and remain conscious of what informs those positions. As practitioners of the scientific enterprise, we come into this work through our lived experiences and our observations of them. Our contribution to this discussion is a blend of science, story, and spirit. As such, initially, we first unpack some of how we enter into this conversation.

[1] From "Message to the Congress," by M. Montessori, 2002, in M. Montessori, Il metodo del bambino e la formazione dell'uomo. Scritti e documenti inediti e rari, a cura di A. Scocchera, Roma, Edizioni Opera Nazionale Montessori, p.129.

Jacqui - I identify as a Montessorian of Color, because being a Montessori educator is my Cosmic Task and being a biracial woman born during the Civil Rights era impacts how I experience the world. I grew up bicultural and bilingual, living half of the years of my four planes of development in Europe. Those were non-consecutive years, determined by changes in where my father was stationed throughout my young life. I credit my parents and the US Army for my ability to appreciate various cultural lifeways and for the adaptability I developed through six moves in those 24 years.

In my first role after Montessori training, I was an elementary guide at a small, Afrocentric Montessori school in East Point, Georgia where we experienced Cosmic Education as an interdependent community and lived a narrative of African-American contribution and excellence. Before accepting education as my vocation, I was drawn to study design. I move through the world accepting design constraints, exploring the field of possibilities, and pursuing creative solutions. I also appreciate the application of theory into practice - going from abstract concepts to concrete manifestations - as a design challenge. Today, as part of a school system serving urban children and families in Cleveland, Ohio, I am working to integrate the Montessori system with the public education system. I find myself reckoning with issues of race, class, and power in both systems, compelling me to advocate for healing, justice, and transformative change.

Kimberlee - When asked who I am, my deeply reflective mind, trained by Montessori and academia, forces me to analyze this question in intense and complex ways. The mother of two young boys, I am quick to contextualize that I am a military spouse to an immigrant with 24 years of active duty service. My husband is Brown and our young children, barely in double digits, already struggle to define who they are. As a White woman, I relate to the complexity they navigate but not for the same reasons. Growing up rural, in parts of six midwestern states, the longest I've lived in one place was as a young adult in Hawaii, for eight years. Living impermanent prevented me from having deep roots and, like a tumbleweed, I have swept across the country looking at, listening for, and learning from patterns in human tendencies.

It's my nature now to identify and examine the ways we are alike and different across communities and cultures, but this effort is refined in my training as a researcher and a Montessorian. I have been the student for whom the educational system did not work well, served as a classroom teacher, prepared undergraduate student teachers, worked as a microschool director, trained as a Montessorian, am a mother of two bi-racial learners and a Ph.D. holder in the field of education. After all these opportunities to observe and analyze educational systems at and across many levels, I remain thoroughly convinced that placed-based, scientific pedagogy is absolutely necessary to emergent learning. It is, in fact, where we find the healing, resiliency, and possibilities that humanity requires to grow our collective and individual conscious awareness.

Montessori is Scientific Pedagogy

> "My point of view is scientific. The question can also be examined from other points of view: religious, philosophical and social ones [...]. All our forces must be united and cooperative, so that new and more terrible catastrophes may be avoided for humanity." ~ Maria Montessori (2)

While it was her love of the child and her deep faith in humanity that drove the work, Dr. Montessori's method was scientific. Science is a mode of knowing that relies on particular ways of observing, thinking, experimenting, and validating. It's how Dr. Montessori arrived at the theory of education that led to the Montessori Method for the first two planes of development. Regarding the intersection of science and the adult guide, in Scientific Pedagogy, Dr. Montessori writes *"...we have been drawn into a false and narrow way, from which we must free ourselves, if we are to establish true and living methods for the training of future generations"* (1912, p. 7). By not moving the teacher into the role of scientist, she says, *"... we shall remain forever in the field of theory"* (1912, p. 8). What she called for then and what is necessary now is an all-encompassing application of the scientific enterprise. Science is the tool by which we shall prepare the teacher, know the child, and alter the trajectory of the human being. As such, scientific pedagogy describes how the Montessori

[2] From "Message to the Congress," by M. Montessori, 2002, in M. Montessori, Il metodo del bambino e la formazione dell'uomo. Scritti e documenti inediti e rari, a cura di A. Scocchera, Roma, Edizioni Opera Nazionale Montessori, p.129.

Method originated, defines who we are, and directs *what we do* in our classrooms and as a Montessori Movement!

Science is the tool by which we shall prepare the teacher, know the child, and alter the trajectory of the human being. As such, scientific pedagogy describes how the Montessori Method originated, defines who we are, and directs what we do in our classrooms and as a Montessori Movement!

Jacqui - I understand scientific pedagogy as the origin story of Montessori in that the theory, method, and materials were developed by observing children and responding the developmental needs, characteristics, and tendencies they manifested. As a practitioner, I recognize my responsibility to do the same: to observe the children, to plan individualized lessons, and to prepare the environment in response to these observations. As a school leader, I am compelled to apply scientific pedagogy at a systems level, as I make authentic connections with children and families the context of school communities where established Montessori practices are not yet leading to their thriving. In addition to sparking analysis, inquiry, and experimentation in these contexts, scientific pedagogy also moves me to look to the examples around the margins of our movement where Montessori has been and is being used to serve children in culturally sustaining ways that validate the liberatory potential of the Montessori Method.

Kimberlee- What I understand of scientific pedagogy comes through a lens informed by my lived experiences, my research training, and the roles I have held in the field of education, as well as Montessori's own work, publications, and training. Scientific pedagogy, to me, is practicing *presencing* and authenticity. It is showing up with all of who we are and allowing others to do the same. It means not assigning value to what we see but attempting to understand it, to seek out what that moment, that child, that classroom needs rather than delegitimizing the evidence that surfaces to inform us. It also means recognizing what's not working, allowing that to be named, and looking for alternatives or additional resources to make it work.

Montessori pedagogy is whole-being pedagogy, comprising more than the sum of its parts: pieces including the philosophical foundation, educational theory, methodology, curriculum, didactic materials, and the normalizing of the guide and student. Dr. Montessori provided the backbone yet intentionally embedded a placeholder for the child to direct and the observer to inform. She explicitly charged the adult in the role of scientist and experimenter. She intended for observations of the child's needs to steer potential solutions. She didn't hint at it, it wasn't a suggestion; she was absolute in her insistence on this role and its value to the child. Without observation and experimentation, we have silenced the child whom we committed to follow.

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The Nature of Science

As we examine the interplay of science and Montessori, we need to better understand the nature of science. To do so, we can look to *Science for All Americans* (SFAA) which provided a set of recommendations for understanding and ways of thinking considered essential for all citizens in a world shaped by science and technology, as our current world is. In that book, the American Association for the Advancement of Science (AAAS) defined science literacy in ways that complement Montessori's own work:

> "Education has no higher purpose than preparing people to lead personally fulfilling and responsible lives. For its part, science education—meaning education in science, mathematics, and technology—should help students to develop the understanding and habits of mind they need to become compassionate human beings able to think for themselves and to face life head on. It should equip them also to participate thoughtfully with fellow citizens in building and protecting a society that is open, decent, and

vital. America's future—its ability to create a truly just society, to sustain its economic vitality, and to remain secure in a world torn by hostilities—depends more than ever on the character and quality of the education that the nation provides for all of its children."(3)

This especially resonates in 2020, as current events underscore the reality that science literacy is not just for school curricula, but necessary for *all* Americans (and global citizens). For the Montessori community to assume the responsibility of scientific pedagogy, we need to better understand and more fully embrace three aspects of the nature of science: science as a worldview, the scientific enterprise, and science as inquiry.

Science as a Worldview

The Scientific Worldview, as described in SFAA, uses the following basic beliefs and attitudes shared among scientists about what they do and how they view their work. Similarly, Montessori is a worldview about human development and social possibilities. Montessori practice and adult preparation must align with a scientific worldview that prioritizes understanding. We suggest the following beliefs and attitudes become shared among Montessorians about what we do and how we view our work:

Scientific Worldview	Montessori as Scientific Pedagogy Worldview
The world is understandable.	Human development is understandable.
Scientific knowledge is durable.	Montessori knowledge is durable.
Scientific ideas are subject to change.	Montessori ideas are subject to change.
Science cannot provide complete answers to all questions.	Montessori cannot provide complete answers to all questions

We, the authors, suggest that the premise that human development is understandable provides the following "fundamental hypothesis" of the Montessori Method and social mission: *Children develop optimally toward their human potential when prepared adults provide physical and psychological environments that respond to their developmental needs and characteristics and are adapted to their time, place, and culture. Children who develop optimally become adults who improve social conditions.*

[3] From "Science for All Americans," by American Association for the Advancement of Science, 1990, p. Xiii. 1990, Oxford University Press.

As an educational community, we pride ourselves in the durability of Montessori knowledge over the past 100+ years. This is consistent with the scientific worldview of the durability of ideas. SFAA states that, "The modification of ideas, rather than their outright rejection, is the norm in science, as powerful constructs tend to survive and grow more precise and to become widely accepted."

The tenet that Montessori ideas are subject to change may be uncomfortable for many in the Montessori community. SFAA states, "Change in knowledge is inevitable because new observations may challenge prevailing theories." An openness to prevailing theories being challenged is not common in Montessori communities; rather, too often, such observations are explained away by other beliefs (founded or unfounded and often impacted by bias). Embracing this aspect of a scientific worldview invites Montessorians to engage in vigilant awareness of emerging scientific understanding and contribute to ongoing scholarship which integrates new knowledge into our educational theory.

The ways members of the Montessori community tend to, embrace, and integrate new scientific learning in our practice determines our relevance and degree of community access. An important example of this comes from the medical community regarding Adverse Childhood Experiences (ACEs) and the impact of trauma on human development. The works of Dr. Nadine Burke Harris and Dr. Bruce Perry resonate powerfully with the Montessori understanding of human development and provide insight into how trauma impacts development and learning. ACEs are recognized as a public health crisis related to children and as such, Montessorians should be very interested and curious about this, and should

The ways members of the Montessori community attend to, embrace, and integrate new scientific learning in our practice determines our relevance and degree of community access.

[4] From Oh, D. L., Jerman, P., Silvério Marques, S., Koita, K., Purewal Boparai, S. K., Burke Harris, N., & Bucci, M. (2018). Systematic review of pediatric health outcomes associated with childhood adversity. BMC pediatrics, 18(1), 83. https://doi.org/10.1186/s12887-018-1037-7 . https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5824569/

[5] From B. Perry, Library, Maltreatment and the Developing Child: How Early Childhood Experience Shapes Child and Culture. The Inaugural Margaret McCain lecture (abstracted); McCain Lecture series, The Centre for Children and Families in the Justice System, London, ON, 2005 https://www.childtrauma.org/brain-dev-neuroscience

be urgently looking at how this new information interacts with and informs our existing understanding of the four planes of development.

When faced with questions for which Montessori cannot provide complete answers, the Montessori community sometimes reverently acknowledges the truth that some aspects of the developing human being are unknowable and sacred. There are times when this is appropriate. Other times, however, we may dismiss questions that cannot be answered easily and so not discover truths that could be found. The completeness of answers in science is fluid state - *what cannot be known today may become knowable in the future because the scientific endeavor consistently seeks knowledge*. Montessori can only benefit from this kind of ongoing pursuit of knowledge. Diversifying the community of Montessorians and the expressions of Montessori environments invites deeper ways of knowing and new perspectives on big questions. A multitude of voices validates and strengthens our scientific claims; it doesn't threaten them. Devaluing cultural expressions of Montessori and marginalizing them renders our scientific claims invalid and obsolete.

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The Scientific Enterprise

Understanding the nature of science requires considering science an enterprise with individual, social, and institutional dimensions. Science includes and impacts education, so Montessori is inherently a part of the scientific enterprise. Intentional integration of the following aspects of the scientific enterprise has the potential to move Montessori to a position of greater visibility and impact for society.

Science is a complex social activity.

Montessori is a complex social activity. It is practiced around the globe and takes on the social values and viewpoints of the cultures where it exists, while it has an explicit

social aim of human solidarity. Due to the social nature of Montessori, embedding reflection time, connecting critical considerations, and leveraging lessons learned in classrooms and systems are essential to our mission and progress.

Science is organized into content disciplines, conducted in a variety of institutions.

As a Montessori community, we often organize ourselves into planes of development; and we study and practice our craft in a variety of institutions with various affiliations. Participation in the scientific enterprise develops a mindset that unifies our work along the developmental continuum and benefits from collaboration across institutions all making contributions to the overall Montessori enterprise.

There are generally accepted ethical principles in the conduct of science.

Ethical principles are inherent in Montessori philosophy and theory, and we must hold ourselves accountable to uphold them. We must also establish generally accepted ethical practices in Montessori environments. These include cultural responsiveness, anti-bias/anti-racist systems, and practices of inclusion.

Scientists participate in public affairs both as specialists and citizens.

Our understanding of human development compels us to advocate for children's rights in terms of education and in a variety of other social conditions.

Jacqui- As an example, between 1997-2013, I had a transformative experience with the scientific enterprise. I had the privilege of participating in intentional scientific pedagogy with the national Montessori community that was seeking to know how to prepare Montessori environments for adolescents. The North American Montessori Teachers Association (NAMTA) convened five Adolescent Colloquia between 1996 and 2009, and also developed the Orientation to Adolescent Studies. At these annual summer gatherings, participants shared a year's worth of activity and observations in our respective schools and contributed to the expansion of the Montessori Method into the 3rd plane of development. My experimentation for this work occurred as part of a school team in Decatur,

Georgia. We created a place-based early adolescent program as a "school of experience in the elements of social life" (6) where students engaged in interdisciplinary work-and-study projects and participated in the cycle of production and exchange.

Science as Inquiry

The final and most familiar aspect of science is that it is driven by inquiry. Inquiry brings greater understanding. The role of observation is incorporated into Montessori training programs as a means of collecting data to understand the child's development, needs, and connection with the learning environment. This is an essential component of the Montessori Method, yet guides frequently lament that it is hard to find the time to do so on a regular basis and there is a need for greater utilization of the data they collect. There is also an opportunity for the Montessori community to expand the tools used for observation and to analyze the ways data is interpreted and utilized. Using the SFAA as our guide, we scaffold five Scientific pedagogy principles to live by, creating a culture of inquiry.

Scientific Community	Montessori Community
Science is not authoritarian	Take the humble stance of not knowing, setting the stage for exploring and learning together; value the insights and contributions of practitioners to collect and share data and collaborate on its analysis. Accept that no Montessorians have special access to the truth; truth lies in the child.
Science demands evidence	Harness the power of observation, notetaking and various means/methods of data collection of the effectiveness of the method in different populations and contexts.

[6] From "Childhood to Adolescence," by M. Montessori, 1994, p. 64.

Scientific Community	Montessori Community
Science is a blend of logic and imagination	Value left brain/ Western ideas AND right brain/Indigenous wisdom; examine Montessori practices (means) for this balance and alignment with goals (ends); not only work with well-developed theories, also conduct research to explore tentative hypotheses.
Science explains and predicts	Use the four planes of development and human tendencies to explain and predict; allow unexpected results to prompt inquiry and make space for current knowledge to inform existing understanding.
Scientists try to identify and avoid bias	Learn to recognize, respond, and redress inequity; sustain justice and cultivate equity as a social and professional responsibility that overcomes our biases. Biases exist in individuals, systems, and various educational instruments.

Scientific Pedagogy in Action

> "My method is founded on the child himself. Our study has its origins in the child. The method has been achieved by following the child and his psychology. It is objective, not subjective as all the others are. It is always based on our ability to interpret our observations of those phenomena which originate in the child himself. A soundly objective method is based on observations, the observation of fact, which is why the Montessori Method is entirely different from all other methods, which came from certain people who arrived at certain theories." ~Maria Montessori (7)

Montessorians start schools with a strong faith and clear hypothesis that our preparation in training, didactics, and environments are prepared enough to aid the development of all children. In reality, our commitment to inquiry allows the child to inform those layers, if we're willing to learn. Reflecting on the experience of one school, we can learn from a place-based application of cultural relevance and professional growth stretching the collective understanding and approach to learning.

[7] From "Scientific Pedagogy," by M. Montessori, 1946, The 1946 London Lectures. Copyright 2012 by Montessori-Pierson Publishing Company.

One Case Study: What we learned from the children

Jacqui- Since 2013, I have been engaged in the process of scientific pedagogy as part of the public Montessori community, working to expand the understanding of how to prepare equitable Montessori environments to serve the public sector. Two organizations emerged during that period and factored prominently in the work of connecting this intentional and collaborative community of practice. The National Center for Montessori in the Public Sector (NCMPS) collects data, develops instruments and protocols for our craft, and disseminates information and stories in a regular publication. Montessori for Social Justice (MSJ) creates safe and brave spaces - online and at an annual summer convening - for Montessori practitioners to exchange ideas and to bear witness to one another's experiences of working toward the social mission of Montessori.

My social innovation laboratory for this work was Stonebrook Montessori, a public charter school in Cleveland, Ohio. The school offers a Montessori experience for children in an urban community by engaging in scientific pedagogy: observing the children, questioning assumptions and abstractions to fully embrace the complexity of human development, and responding to align practices that prepare learning environments to meet the real needs of the children, families and neighborhood.

By design, the school was aligned with the fairly stable set of beliefs and practices of the Montessori Method, arranged in the established relationships that have proven their effectiveness for child development and learning. The Montessori worldview exists across a global context and, yet, within a fairly narrow sector of American society: primarily suburban, White, and tuition paying. Like all public Montessori schools, Stonebrook set out to disrupt this Montessori status quo by serving a different population. Its beautifully renovated, historical school building comes alive every day with a population of bright, beautiful children, 95+% of whom are African-American, and 65-70% of whom qualify for free and reduced lunch as a measure of their family's socio-economic status.

None of the original Stonebrook teachers or administrators had experience working in the public sector or with the school's population demographic, and fewer than five

of the original 95 Stonebrook students and families had experience with Montessori education. The founding team was aware of this cultural mismatch, yet we were naive to the reality and there were many *unexpected* outcomes. Race and culture quickly became topics of explicit and constant conversations. When the children didn't respond to the prepared environments as expected, our attempts to make sense of our observations according to a prevailing worldview initially included blaming the children and their families or making excuses due to their societal circumstances.

Montessori states, "If she does show resistance, this will rarely be a direct, or even intended reply to an adult's action. It will rather be a vital defense of her own psychic integrity or an unconscious reaction to oppression." (8) Instead of applying common labels, resorting to deficit thinking, and applying convenient strategies for handling discipline, addressing special needs, and teaching academic skills, the Stonebrook team assumed a stance of inquiry and set out to "follow the child and his psychology," and to increase their "ability to interpret *our observations of those phenomena which originate in the child himself."*

In relationship with the children and their families, the team came to understand that the school population experienced high levels of adversity, trauma and toxic stress, and those things naturally made their way into the school. The team identified trauma as a knowledge gap and responded by studying trauma extensively through ongoing professional development and consultant support. The lens of trauma in all its forms - acute, ongoing and generational - helped the team to explain some of their observations about student learning and behavior.

In *A New Peace Paradigm: Our Human Needs and the Tangles of Trauma,* Paul Chappell offered a new way of understanding the human condition that shows how fulfilling our non-physical (spiritual) needs, such as purpose and meaning, helps us fulfill our physical (material) needs. In collaboration with the other established public Montessori school in the city, the Stonebrook team endeavored to recognize the nine non-physical needs Chap-

[8] From "Discovery of the Child," by M. Montessori. Copyright 1986 by Ballantine Books.

pell identifies and to incorporate them into non-punitive systems that support healing and learning, maintaining the dignity of the child.

Standardized test scores are the primary measure of student achievement in public education. As the children at Stonebrook aged into taking these tests, an urgency arose around academic proficiency in general and literacy development in particular. There is substantial research regarding literacy deficits related to childhood poverty, but that leads to a deficit view of children being "behind" when they start school. The achievement gap between racial/ethnic groups in this country is also well documented. When this phenomenon is more appropriately reframed as an opportunity gap, it shifts the responsibility from the child to the system, yet doesn't provide much insight into effective solutions. How might Montessorians merge the understanding of the sensitive period for language in the first plane of development with the prevailing evidence-based research on teaching reading? Literacy development became a focus area for the school and a literacy consultant was contracted to develop teacher capacity, to build systems for collecting data, and to analyze data. In addition, Zaretta Hammond's scholarly work on culturally responsive teaching that relies on a recognition of deep culture and of brain chemistry provided keys for calibrating teaching practices to the children being served. She counters the deficit narrative with the narrative that the task of education is to move children from being dependent learners to independent learners, adding valuable insight to the Montessori goal of fostering independence.

The Stonebrook team dedicated themselves to understanding and responding to the potential for brilliance in the Black children who show up to school every day. In order to do this, they had to create a school culture of critical love (9) that allowed them to recognize what the children revealed. They also had to become scientific pedagogues, lifelong learners, open to learning new things, and willing to re-examine what they already knew and believed.

[9] From "Racial Literacy Development model theorized" by Y. Sealey-Ruiz, 2020, Critical love is the first step and is defined as "a profound ethical commitment to caring for the communities in which we work." (https://www.yolandasealeyruiz.com/archaeology-of-self).

Kimberlee- The Stonebrook story, like so many before and alongside it, reflects commonalities we see when communities experiencing or with a history of trauma adopt Montessori with the understanding that the child will lead. This work, in practice, requires tremendous commitment on the part of the guide and the community to allow this powerful directive that shows itself to be valid and worthy of attention. Tensions emerge as Montessori practitioners in the U.S. find what is occurring in their classroom in conflict with idealized training and doctrine. In my own experiences, as children with trauma show up in prepared environments that exude safety, schools make decisions about whether or not to bear witness to the trauma that surfaces in that space and whether or not to confront it. With the explicit instruction, the directive even, to stay in the space of observer (as opposed to the judge and jury on a child's goodness of fit for the method), action based inquiry requires the practitioner and school to cultivate a mindset of not assuming what is known but striving to better understand. In failing to move into the role of observer, documenter, reflector, and resource finder, we fail to liberate young learners from doctrine. Without evolving and adapting our practices to reflect the needs of the children before us, we may even inflict harm.

Scientific Pedagogy: Action is the Answer

> "I believe in intuition and inspiration. … At times I feel certain I am right while not knowing the reason. When the eclipse of 1919 confirmed my intuition, I was not in the least surprised. In fact, I would have been astonished had it turned out otherwise. Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution. It is, strictly speaking, a real factor in scientific research." - Albert Einstein, 1931

When the Montessori community engages in research– open-ended, community-based and participatory research-- it honors Dr. Montessori's legacy, stewarding the scientific enterprise.

Here before us, in this remarkable moment of disruption, what can the Montessori community contribute to the change we wish to see in the world? What is possible, from here? Scientific pedagogy suggests we can't completely know that answer. To understand who we are,

where we are, and where we're going we must first awaken our human tendencies and channel that inner scientist. We must utilize those innate urges to grow and expand. We must become curious, open-minded, and experimental. There is a quote by Margaret Wheatly that inspires us to be more, "To strengthen a system, connect it to itself, so it can learn about itself, from itself." If we are to ever do Dr. Montessori's vision justice, we must begin by returning to our roots, our scientific origin. We must reconnect with the powers of investigation, observation, and iteration to activate the dormant, transformative power of a global movement in the moment of opportunity before us.

Kimberlee- When the Montessori community engages in research-- open-ended, community-based and participatory research-- it honors Dr. Montessori's legacy, stewarding the scientific enterprise. Trainers, therefore, must prepare teachers to internalize the scientific aspects, methods, and principles that enable teachers to enter the classroom ready to listen, ready to see, ready to learn, and ready to adapt to what the child is asking. To navigate the unknown, complex paradigm we are entering, as Montessori suggests, "...all our forces must be united and cooperative…" and that calls on each of us to adhere to a mindset of scientific pedagogy in our small piece of the whole. Additionally, it requires us to know our limitations, as well as how and when to seek additional support, resources, and perspectives.

Jacqui- Montessori leaders must expand the narrative of our Montessori worldview to embrace scientific pedagogy. Teacher preparation must instill a mindset that requires a commitment to continuous improvement through continuous learning. For the Montessori community, that requires us to apply the nature of scientific inquiry to our teacher training and classroom practices. Grounding ourselves in this scientific pedagogy worldview, we must prepare adults to implement scientific methods grounded in a critical love of humanity.

Just as Dr. Montessori saw a window of opportunity before her at the turn of the 19th century, we find modern global society at the precipice of an *emerging worldview* (post-neoliberal). Informed by philosophical, religious, political, and economic beliefs, our

worldviews, which are often allowed to flourish unexamined, inform and organize the ways in which humans experience and interpret the world (and socialize children into it!). Today, we find ourselves preparing children to inherit an unpredictable, uncharted future, one structurally aligned with global complexity at levels we've never conceptualized. Otto Sharwmer of MIT, artfully describes this chaotic and clashing paradigm shift as "one system dying...while another is waiting to be born."

A Call to Action

With the celebration of her 150th anniversary, we embrace Maria Montessori's vision for great social growth. Montessori practitioners must become intentional about our collective and individual responsibility to disrupt educational models that don't serve all children, in doing so, we recommit our efforts to social reform and humanity. To be change agents with impact, we must actively exercise science in our application of Montessori through a variety of communities of practice and be willing to move away from the idea that we have this figured out.

To fulfill the purpose of Montessori, teachers, schools, trainers, and affiliates must return to learning about our work, about ourselves, and from the children who guide our efforts. We must collectively call awareness to this conversation and challenge the whole community to live into its scientific potential. Those gorgeous classrooms weren't Dr. Montessori's greatest legacy; constant learning, continuous improvement, and permission to take this to the next level, that's what she bequeathed us.

Montessori recognized the human tendencies as innate forces within all human beings throughout their lives. Not only are they reflected in the practices of the Montessori Method in the prepared environment, they must also be practiced by the adults who are to be scientific pedagogues. Around the globe there are amazing, dedicated teams of adults with varying degrees of consciousness, who come alive in their purposeful **work** serving children. From a stance of critical humility, they accept the challenge to navigate the complexity of human development and stay the course with means that are aligned with their ends. They engage in the responsive cycle of **activity** of following the children

we serve. They observe and respond by creating materials and preparing environments and themselves. They observe, analyze and **abstract** new understanding.

Each successful step provides some clarity as they **manipulate** their school and classroom environments to create the conditions for their children to thrive. Methodically, they test and confirm the **exactness** of these conditions. A new **order** emerges and they re-**orient** to the new reality, briefly celebrating the harmony of the child in the environment. Through connection and **communication** with others in carefully cultivated networks of relationships, another resource or development or someone else's scientific discovery in a related field provides the right insight or bit of information to spur another path of exploration, learning and discovery. Through the repetition of the scientific process, each cycle reveals new truths and thus develops our collective understanding. Gradually and collaboratively, we perfect the practice of our pedagogy.

** This paper is based on a talk given at the NAMTA conference in October, 2019. Two months later, the Montessori community lost Jackie Cossentino. As an ethnographer, Jackie championed the vital role of science in Montessori pedagogy and had a significant impact on Montessori in the public sector. We continue to be inspired and guided by her work, and we dedicate this paper to her memory.

A Tribute To Montessori Voices

IN REMEMBERENCE

Deborah Bricker

ANNETTE HAINES

Robyn Milos

KAY BAKER

Gregory MacDonald

JOEN BETTMANN

Jennifer Shields

In Remembrance: Annette Haines, Kay Baker and Joen Bettmann

Deborah Bricker

From the start, NAMTA has been a means for teachers to learn from other teachers, from trainers, and from ideas that complement Montessori work, or even challenge us to better study and understand our Montessori mission.

NAMTA membership, readers, and conference attendees value the voices read and heard through NAMTA projects. We know this because you told us in comments and conference feedback. You value the points of view of other caring and dedicated professionals. Sharing the challenges and joys of life with children and families, gaining insight, deepening our practice… all are important and all are viewed through the lens of those we admire and look to for vision and knowledge, our AMI trainers.

NAMTA's voice has always been guided by, inspired by, and informed by any trainer from whom we sought guidance. But we would like to acknowledge three AMI trainers we lost over the recent past in shockingly quick succession. Recognition and appreciation have been formally offered for Annette Haines, Kay Baker, and Joen Bettmann. But in our final Journal, NAMTA would additionally like to offer a heartfelt thank you to Annette, Kay, and Joen. They supported NAMTA by always being available to help us and to help you by writing for the NAMTA Journal, by offering keynotes and breakouts at conferences, by raising the level of discussion of our profession. NAMTA is grateful for the contributions made by Annette, Kay, and Joen, and their voices will forever be a part of the NAMTA legacy.

Legacy is what we pass on, and that legacy depends on who we pass on to. Three of the many recipients of the legacy of Annette, Kay, and Joen have offered some personal thoughts about their AMI trainer and colleague.

Robyn Milos was trained by Annette Haines and was later invited by Annette to help administrate the Training Center of St. Louis. Robyn currently is co-administrator and teaches at Villa di Maria Montessori School; she launched the Haines Scholarship Fund in honor of Annette Haines. Her admiration for Annette is demonstrated in her love of and happiness in guiding children; she has been a primary teacher since 2000.

Greg MacDonald is the Director of Elementary training at the Montessori Institute of San Diego. He was guided by Kay Baker in his training to become a trainer. Greg has carried on the legacy passed on by Kay through training and by generously offering support to teachers through his writing, workshops, and training center outreach.

Jennifer Shields is a Director of Primary Training at the Washington Montessori Institute. Her love of Joen Bettmann will be apparent when you read her remembrance. She, too, passes on Joen's gifts through her work at WMI, through her service on the AMI board, and in her work with teachers and schools.

We invited these three protégés to add a simple remembrance of their admired colleagues as a way to send a tribute to Annette, Kay, and Joen. They offer an appreciation of their gifts large and small; a tribute to their humanity and the love felt for them, and gratitude for the legacy they leave to us. They show us the beauty, generosity, refinement, humor, friendship, and knowledge offered by the three masters they remember. We thank Robyn, Greg, and Jennifer for demonstrating the same qualities they admire in their mentors; they are truly the legacy of their colleagues.

NAMTA is proud and grateful to have been a conduit to share the work of Annette, Kay, and Joen; and through them, also thank all of the wonderful and generous AMI trainers who have given to the Montessori world.

Annette Haines

Dr. Annette Haines is an internationally recognized as an AMI lecturer, examiner, and trainer. She not only personally trained hundreds of Montessori guides, but contributed to the legacy of Montessori by developing literature and serving as part of the AMI Board and training community. She received an AMI elementary diploma under the direction of Kay Baker in 1987, and also held a master's degree and doctorate in education. In 1991, Dr. Haines became the Director of Primary Training at the Montessori Training Center of St. Louis, a position she held until her death in 2017. She and her husband Lew then opened the Montessori Lab School in 2014. She was the author of the Montessori Glossary and a co-author of Optimal Developmental Outcomes with Kay Baker and David Kahn. She will forever be remembered for her tireless contributions to the transformation of the Montessori movement and those she has touched both personally and professionally.

Tribute To Annette Haines

Robyn Milos

Instructor. Mentor. Friend.

It's funny, the things you remember about people.

Dr. Haines leaves indelible footprints far and wide across the global Montessori community. Her impact as an AMI trainer, lecturer, examiner and consultant is plainly obvious to all of us. She elevated the Saint Louis Montessori community through her drive and determination, giving life to her dream of opening a Lab School for Children that operates under the Montessori Training Center of STL. Students from around the world came to earn their diploma under Dr. Haines' tutelage.

Nothing superfluous. There is something I remember. Her words.

"Nothing superfluous." Annette Haines, in summation. She spoke in terms concise, directed and often-time pointed. Dr. Haines told it as it was, with little to no filler besides. Her presentations and prepared environments followed suit.

Nothing superfluous.

This became a recurring theme among those who shared their Monte-stories with me after Dr. Haines passed, how her words penetrated. How they inspired. How, when you were doubt-ridden, or struggling with something, or trying to find your legs to make a huge leap of faith into a new program, or career path, or anything really, she would say just the right thing. It would be succinct and direct, and exactly the thing that would make you think inwardly and discover that you can, in fact, do that hard thing.

With nothing superfluous.

In some ways, this is her legacy, living within the people who shine a little more brightly with the strength inside that she helped them to see.

And yet, she couldn't understand why people found her to be intimidating.

One time, I explained.
"Because you're Doctor Haines. People leave their homes, their families to study under you" To which, she answered "If only they'd seen me cutting the grass and mucking the stalls yesterday…"

My own Monte-story intersected with Dr. Haines long, long ago. We laughed once, after years of training under and working beside Dr. Haines, that in our first meeting, our roles were reversed. I was a young child (the "teacher" of childhood) and she was a teacher in training (the learner, in this case) at the Montessori Training Center of St. Louis, then operating at Villa di Maria.

I've known her for decades, this driven, directed intellect. Her poise and presence inspired me, and countless others, to do the hard things. To look within and find what we need, right there. With nothing superfluous.

Nothing superfluous.
It's funny, the things you remember about people, despite all of this.

I can always count on picturing Dr. Annette Haines and her playful smile and raised eyebrows when presenting the cylinder block and saying "mixy mixy!" in that sweet and surprising way she did, for each and every course. And even that, whimsical and out-of-character, came with nothing superfluous. Just a simple happiness in the doing of it.

Kay Baker

Kay Baker was an internationally recognized teacher, trainer, lecturer, and author. She held AMI diplomas for the primary and elementary. She worked on the elementary training at the Washington Montessori Institute from 1978-1988 and became the Director of Training for the Elementary Course at WMI in 1990. In addition, Kay served on the board of AMI / USA and the editorial board for the AMI Journal. She also held a doctorate in mathematics and combined her interest in Montessori and math when she assisted in the publication of the books Psychogeometria and Psychoaritmetica. She was a co-author of Optimal Developmental Outcomes with Annette Haines and David Kahn. Kay passed in 2019.

Tribute To Kay Baker

Gregory MacDonald

When I was her trainee Trainer, one of the first things I remember hearing Kay say was: "If adult students consistently have trouble with some part of a lecture, then we have to fix that - If they have trouble, then they'll have trouble conveying the idea to children." And I saw Kay work first on this section of a lecture, and then on that, improving her course a little each year.

Kay's mind was always active. She worked hard to structure the elementary albums so that lectures and presentations were logically placed. So here and there, lecture sections were re-assigned, reorganized, realigned, reworded, and restructured for logic and for accessibility.

Kay took a practical approach to the many requirements that various bureaucracies imposed. "Let's see how this idea would play out for adults", she'd say. When high-stakes testing flooded education, Kay asked: "How would these bureaucrats respond if they had to successfully pass a test each month, which measured their performance? Would they be such committed test advocates?" This is an extremely revealing test that I apply constantly in my own work!

Kay pioneered the use of an overhead camera and projection screen for lecture delivery. Generations of students have since reaped the benefits. Her course at WMI was also the first to permit laptops in lectures, and student training experiences have been enhanced thereafter as a result.

She co-edited the English translations of Dr. Montessori's works *Psychogeometry* and *Psychoarithmetic*. Her knowledge and her attention to detail made these English translations the best editions available. Kay also published innumerable articles that will light the

way for future generations of Trainers and Guides. If you haven't read her work, make time to do this - Every article is a treasury of theory, practice, and common sense.

Kay's untold numbers of Workshop and Conference presentations enabled generations of Montessori Guides to refine their work with children, and to re-ignite their professional fires. When she consulted, Kay's encouragement and guidance empowered schools and their faculties.

Kay epitomized the gentle, kind approach that is so important in our work. When a student struggled, or questioned the training being delivered, Kay responded empathetically: "How can we support this person?" she'd ask. "What might help them to see this differently?" Kay worked from a place of love, and from an effort to understand, not from a place of defensiveness or of judgment.

... So how can I sum up Dr. Kay Baker?

She was a person of deep wisdom, whose insights into Montessori philosophy and practice were profound. She was a kind, gentle human being who cared unreservedly for everyone with whom she came into contact. She focused her attention on the needs of children, and in doing so, she made the lives of children (and the adults who cared for them) immensely better.

For me personally, Kay was a teacher, a mentor, a model, a colleague, and a most treasured friend. Every one of my days, and every one of my lectures, is impacted by Kay's guidance. I don't know who I'd be, or where I'd be, were it not for all that Kay gave me. I miss her terribly, and I will be eternally grateful for my time with her.

Joen Bettmann

Joen Bettmann was a highly regarded AMI trainer, consultant, examiner, and speaker. In 1987, Joen started the Ohio Montessori Training Institute in Cleveland in 1987 with her own trainer Hildegaard Solzbacher, and she was a member of the AMI Training Group from 2011-2018. Before her death in 2020, she was the Director of Primary Training at the International Montessori Training Institute in Atlanta. Her 35 years of Montessori work took her throughout the world including England, Australia, Israel, and South Africa. One of her trainees, Myesha Green, recalls the way Joen brought the world into the classroom: "As a trainer, Joen was known for her absolutely gorgeous and meticulously prepared environments, with every detail attended to. There were bowls from Africa and trays from India. She had sculptures from Israel and paintings from South America. She made sure that anyone training with her remembered to include aspects of the entire world in what they offered the child."

In 2020, Joen was honored by AMI/USA as the first member to be inducted into the Circle of Distinction.

Tribute To Joen Bettmann

Jennifer Shields

Exquisite and Playful

The wall phone rang in my group house in winter of 1991. In response to my letter inquiring about the Ohio Montessori Training Institute, Joen Bettmann invited me to train on her first course. I remember her voice as I paced the linoleum, twirling the cord, her description of Cleveland's parks as the "Emerald Necklace." I decided OMTI would be the place for me.

From the first lecture, seeing Joen's careful writing on the easel, enumerating the Human Tendencies, hearing her voice, I knew that I had found the person to connect me with my vocation (I learned to call it a cosmic task). I picture the vases of native flowers on Joen's table. And hear her voice singing "Forget Me Not, I'm a Little Blue Flower in the Woods". Reading "Sarah and the Door" and "Thunder Cake." Her hands tying the bow frame, counting beads into a brass cup.

After a year in which Joen allowed me to become a self-motivated learner by refusing to grade or praise my work, I was lucky enough to grow into becoming no longer her student, but now a colleague and a friend. I got to hang out with her buddies: Patricia and Bruce, Frank, her daughter Sarah, and eventually her wonderful life partner Art. She sent earnest messages on beautiful cards. And whenever we could see each other, Joen probed to find out about my life and always bore a gift: chocolate, a book of poetry, a scarf, a tiny geode. Even when she was too sick to attend the refresher course, I was so nervous and excited to deliver, she sent gifts to be certain I knew she was thinking of me and would have been in the front row had she been able. Can you picture her perched on a (too tall) chair with her notebook, a good pen, and her alert, intelligent gaze?

I lost my mother to breast cancer in the 80s and the universe brought me a new, Jewish, Montessori mother who decades later faced the same illness. But like my mother, Joen kept her sparkle. She continued to read and later switched to listening to books and articles. She loved music, strong coffee on old china, and useful antiques (a child's desk, a perfect doily, a muslin apron). Along with her wicked wit, she embodied what Dr. Montessori termed diamond rod integrity: the moral conviction and driving work ethic to do the very best she could for children and for adults working to serve children's development.

When I meet someone trained by Joen, there is a resonance, an echo, a shared spirit. I lectured in Tel Aviv last winter and heard Joen's name invoked with fondness and deep respect. I corresponded recently with a Montessori guide poetically named Venus and she mentioned our Joen, calling her playful and exquisite. And doesn't that just capture her? Not just her pocketbooks and fetching (tiny) shoes and earrings or outfits to match her presentations. No, it was that sparkle and intense love for life, for children, and for the Montessori community and the good work.

Thank you, Joen. May your memory be a blessing.

GUIDED BY NATURE

INTRODUCTION

Jacquie Maughan

THE CHILD IN THE WORLD

Lena Wikramaratne

SOWING THE SEEDS OF THE SCIENCES: OUR GIFT TO THE FUTURE

Audrey Sillick

EXPERIENCES IN NATURE: RESOLUTE SECOND-PLANE DIRECTIONS TOWARDS ERDKINDER

Gerard Leonard and Kathleen Allen

ECOPSYCHOLOGY: HOW IMMERSION IN NATURE BENEFITS YOUR HEALTH

Jim Robbins

Guided by Nature

By Jacquie Maughan

Within each section of this journal is the implicit idea that our work in Montessori is a source of inspiration, while at the same time suggests a deep responsibility.

Upon reflection of nature's formative role for children throughout the planes of development, it becomes clear that the natural world too presents us with a boundless source of inspiration and also, something for which we as Montessorians and as humans must take on a more committed responsibility. The authors in this section reflect on the unique opportunities and gifts nature provides for children of all ages, and without a deeper consideration of to the natural world, the children, and indeed all of us, will lose out.

Here we begin with an article by Lena Wikramaratne, first published in the NAMTA Quarterly, Volume 2, No. 2, 1976. As Miss Lena states, ". . . nature is the source of all knowledge." Regardless of the stage of development of the children with whom we work – our lessons always begin with the real world, and often that means the natural world, of which we humans are a part.

Miss Lena spent the war years, 1939-1946, with Dr. Montessori and Mario when they were interred at Kodaikanal, India. Miss Lena reminds us that during this time of war, it was not possible to get books – but as Dr. Montessori stated, "the best book of all was there for the asking – *the Book of Nature.*" And Lena continues: "There were rambles every day in the woods and meadows, up and down the rocks and slopes of water falls, crossing the brooks and fishing in the ponds, rowing to and fro in the lake, collecting beetles, butterflies and frogs' eggs, baby lizards, etc.…Every ramble became an intellectual walk."[1]

[1] Dr. Maria Montessori, *The Discovery of the Child*, (The Netherlands: Montessori-Pierson, 1988), 69-77

And as Dr. Montessori has stated: "Let the children be free; encourage them; let them run outside when it is raining; let them remove their shoes when they find a puddle of water; and, when the grass of the meadows is damp with dew, let them run on it and trample it with their bare feet; let them rest peacefully when a tree invites them to sleep beneath its shade; let them shout and laugh when the sun wakes them in the morning as it wakes every living creature that divides its day between waking and sleeping."

Throughout this section, the invitation and the call to action is clear – in order to love nature and to care for nature, beginning with the youngest child, we must be in and connect with nature, discovering ourselves as part of and not separate from that universe.

Audrey Sillick provides the link between the period of the absorbent mind of the primary child and the inspiration of the mind and imagination of the elementary level. "In the Children's House, knowledge absorbed by 'good doing' is multi-sensory, laying the foundation for research. . . A facilitative environment at this primary level provides the means for a systematic ascent toward knowledge."

Audrey also leads us to the link between nature and the imagination which Gerry Leonard and Kathleen Allen continue to explore: "The creative imagination of the child is not the result of an accumulation of information, but of a continued transaction with the mystery and wonder of a living world."

Gerry and Kathleen's article ties together the planes of development and the child's evolution in the relationship to and study of the natural world: "More than just experience, they (children) want to really feel part of nature's great circling. Maria Montessori's vision was that the children should 'live in Nature.' She saw that children naturally revel in forest and field and stream, and want to be intimate with their kin, the Earth's creatures. . . deep intimacy with the natural world was not only very healing for the children but prepared him well for the next plane of development, for his relationship to society, to the human family."

Dr. Montessori has suggested that "…when children come into contact with nature, they reveal their strength."

Nature's power to bring out that strength in children does not end with childhood. In our concluding article, Jim Robbins summarizes a body of research that explores the beneficial effects that exposure to nature has on our health and reducing stress. Our children are growing up with the reality of the threat that climate change has on their futures. Perhaps now more than ever, the commitment to connecting ourselves and children to the natural world is essential. Jim concludes his article, "Understanding nature's therapeutic effects may be arriving at a propitious moment. Some studies have found that anxiety over climate change is a growing phenomenon. Ironically, one of the best antidotes for that might be a dose of green space."

This section of the Journal provides us with a renewed sense of our work – the children's and our relationship to nature comprise both an inspiration and opportunity and yet suggest a profound responsibility to respond to this call – in order to save ourselves, we must save nature.

Emily Dickinson reminds us of what we might find.

"Nature" is what we see—
The Hill—the Afternoon—
Squirrel—Eclipse—the Bumble bee—
Nay—Nature is Heaven—
Nature is what we hear—
The Bobolink—the Sea—
Thunder—the Cricket—
Nay—Nature is Harmony—
Nature is what we know—
Yet have no art to say—
So impotent Our Wisdom is
To her Simplicity.

- *Emily Dickinson*

The Child In Nature

Lena Wikramaratne, (1909 – 1982), studied under Dr. Maria Montessori and Mario Montessori in Adyar, Madras. In 1941, she opened a school at Kodaikanal, which became a center for Montessori training until 1944, when she established and conducted the Montessori center in Colombo, Ceylon. In 1961, she came to the United States, conducting AMI teacher training courses and lecturing around the country. Miss Lena served as lecturer and director of teacher training for the Association Montessori Internationale in Palo Alto, California and Avila College in Kansas City. For forty years, Miss Lena pursued the integration of the natural world and Montessori learning.

The Child In The World Of Nature

by Lena Wikramaratne

In our modern age of technocracy where human living is so overwhelmed by a great variety of man-made tools, machines, and other artificial paraphernalia - which to the modern man have become necessities of life - it is not so easy to conceive that the natural habitat of man is the world of nature. Through the eras of civilization mankind has removed himself more and more from that world as he now lives in a conceptualized world of his own creation.

Most of man's affairs are conducted in the great megalopolitan environment of economic productions. It does not enter his mind that the world of nature is what really supports his life and generates the artificialities of his own making that he gathers around himself.

This is remarkably evident in the field of education which purports to help the young learn of the world around them so that they in turn can contribute to its economic advancement. All of the teaching of children dealswith imparting information on very abstract levels of theories, rules, formulae, symbols, and concepts marshalled into systematic programs. These seem to bear little relationship to the things of nature where man first garnered them. For nature is the source of all knowledge. Man in his encounter with it has made all of the progress which we call civilization.

Dr. Montessori sums it up this way: "In our time amidst the civilized environment of our society, children live very distant from nature and have few opportunities to enter into intimate contact with it." In fact, people harbor contradictions about the value of nature in daily life - so much so that it is concluded that children thrive by playing in specially contrived sand boxes and by being given the pleasure of seeing caged birds and animals.

The adult society shelters children from the wind, rain, mountains, streams, and even the grass, all of which are part of the bounteous gifts bestowed by an ever generous nature.

Dr. Montessori continues: "When kept in restraint by us and degradedand irritated by the prison, the child kills insects and other harmless animals, it seems to us to be natural. We do not realize that his mind has already been 'estranged from nature' and all that it holds."

Then in schools we bring in artificial sets of natural life for the study of biology, and "streamlined" rocks and landscapes, for learning geology and geography. As for mathematics, which is the basis of all of the functioning of the universe, it is deemed sufficient to memorize the computed facts and work with them in abstract symbols and equations without any realization of the natural laws which initially set them into being.

Early man lived all of his life in nature where his needs for survival weregradually served by his exploring and experimenting with the wealth of his immense world. In each of his needs - for food, clothing, and a home -there were innate tendencies which acted as directives in his encounters with the untamed and fearsome environment around him. He walked thesurface of the earth and selected whatever would be of benefit to him, ledby his powers of intelligence and free choice. He learned the art of manipulating the raw materials and developed skills of using them to his bestadvantage. Thus, he grew in knowledge of scientific and artistic valueswhereby he began to surround himself with the "good" things of life.

With his innate desire to seek perfection in all of his work and blest with a reasoning and creative mind, early man soon began to invent toolswhich would ease his efforts and enhance the productivity of his work, (e.g., the plow, the wheel, the pulley and lever, the canoe and the tent). Soon he was building and making artifacts and observing the sun and thestars and their effect on all of man's doings. From here he derived and used the laws of nature and its secrets for the welfare of all mankind. These were the first beginnings of all the knowledge that has accumulated throughout the successive ages wherever man made

his home in the world. As he began to travel far and wide communicating and interacting with other groups of people, bartering and trading, his understanding and basisof culture flourished.

In each succeeding generation the child has been the link that builds bridges of "new" learning which brings man on to a fresh sphere of knowledge and creativity.

But in the 20th century, mankind seems to have accumulated not onlythe "good things of life" but also a host of problems. Chief among these is the increasing difficulty of imparting all of the wealth of knowledge and skills accrued by man through the centuries to the child. The difficulty lies not only in the enormity of that wealth but also in what has come to be called in education a-l circles, the "learning disabilities" of present day children.

These disabilities are not all hereditary. Many of them could be the result of the increasing restrictions that civilized living forces on the modern child. However, some of these restrictions were inevitable as human beings began to live in communities. Dr. Montessori refers to the Wild Boy of Averyon whom the French educator Itard brought successfully to the ways of social life. Montessori speaks of the "renunciation and restrictions" to which he was subjected. This child who freely "ran" and roamed in the woods was taught to "walk" and his "ringing shouts of joy"were toned down to the modulations of the speaking voice. Itard himself was impressed by the sensitivity with which the boy was attuned to the "sun emerging from the clouds" the "windstorm swaying in the trees," the "falling of snow" all of which made him break into "shouts of laughter as if almost convulsed with joy."

Yet Itard went on almost reluctantly training the boy to enter the confines of society. Itard worked on two aspects of his education which were (1) to bring him within the bounds of community living and (2) to develop his intellectual powers. To quote from Dr. Montessori again: "The boy whilst living his life of terrible abandonment, had found happiness in it. He had almost been absorbed as part of nature in which he delighted; rain,

snow, tempest, boundless space had formed his spectacles, his companions, his love." Civilized life means renunciation of all this, but it carries with it a conquest which furthers human progress.

The human progress Dr. Montessori speaks of has so captivated the mind of modern man that his schemes of education aim solely to advance the intellectual capacity of the child. Programs center around the training of the mind for maximum performance. And as all *knowledge* is embodied in books children are constrained to study from them with much emphasis given to the ability to *read and write*. Great value is placed on intelligence tests geared to evaluating mental skills which would ensure success. Adult society looks for the "competence" of the child without understanding hisneed for a preparation time in constructing and building up his faculties.

Every infant comes to the world in a state of seeming dependence and helplessness but the little mind is full of energy and power to take in all of the world around him. Just as early man oriented to his environs, so every infant begins to orient himself to his surroundings. This absorbent mind holds fast to all of the impressions coming through the senses and begins to form a stratum of subconscious knowledge and feeling which will be an intimate part of his being lasting throughout the rest of his life. In the past when the child was carried about by his family as they worked in rural surroundings, the infant was exposed to all of the beauty and majesty as well as the smallest details of the world of nature. As he became skillful in transporting himself, he had all of God's earth around him in which to roam. He walked, ran, jumped and climbed all of the slopes, rocks and trees, crossed the brooks and rolled in the grass and meadows, thus learning to balance his physical body and coordinate his muscular movements.

And again, quoting from Dr. Montessori: "The muscular energy of the child - even of the very young - is greater than we can imagine, but in order that this is revealed to us we must allow him the freedom to move in the natural world. Instead, we ask ourselves anxiously how we can make the children sleep after daybreak, how we can train them *not* to take off their shoes and not to wander over the fields. Indeed, the child needs not only

to know nature but to *live* in nature. What is important is the liberation of the child from the bonds which isolate him in the artificial life created by living in cities."

Until very recently the need for training in muscular movement at the pre-school level was not at all considered in education. The increasing lack of motor-visual coordination became more and more apparent in the kindergarten classes. With this there came to be noticed a lack of hand-eye coordination which in turn resulted in deficiencies in speech, reading and writing. So remedial efforts began to be taken which again were confined to the artificial gymnasium and exercises with man-made structures suchas measured stairs, fixed trampolines and steel climbing frames. This training, like that used for caged animals in a zoo, does not allow for observing, thinking or judging distances or heights. In the world of Nature there is scope for the perceiving and thinking mind in coming up against the un expected and exercising the senses and muscles. These naturally help develop coordination and integration and enhance the powers of the intelligence.

The other aspect of eye-hand-motor training is that gained by participating in the daily activities necessary for human living such as sitting, standing, washing, dressing, carrying, pouring, and handling all types of tools and utensils in the care of self and of the things in the environment. All of these were integral to the patterns of daily life when the home contained big family groups involved in constant interaction within the community. Social activities require a certain standard of behavior. Few of these are part of the daily life of the child today due to the disbanding of the family unit as well as the use of energy tools. The children do not know how to use their hands and fingers. They are incapable of holding or handling a pencil or brush except with the "monkey" grasp that comes early and naturally like in the apes. As for the social graces and courtesies, the trend and practice of adult permissiveness considers these unnecessary hindrances.

In the development of intellectual learning, we see the use of man-made materials which seek to instill abstract concepts. As Dr. Montessori often remarked, geography, biology, and mathematics are not in books. When man gathered knowledge of these, he was able to put it into the symbols of words, signs and illustrations, and with the invention of

printing all of these facts are now recorded in books. But knowledge must not be separated or isolated from the world of nature which is and has been the source of all man's experience. The modern child is forced to imbibe only the results of that experience and so loses interest. This emphasizes one of the basic defects in the present teaching system - imparting knowledge for *performance* rather than for "interest." Interest cannot be aroused by extraneous propulsion because it is an inner desire which wells up from an innate positive feeling that stirs within. Interest grows in the individual who is in harmony with the natural tendencies of the human spirit in tune with nature.

The tragedy today is that the most sensitive age in which "interests " can be created, that is, the first six years of infancy and childhood, are frittered away in random idle play and fantasy in day care centers and "play" schools. At this period the child is full of interest and inquiry in knowing what the world is all about. He can subconsciously retain and store the detailed perceptions of those things to which he has been ex posed. This absorbing mind which could be filled with many integrated impressions of the wonder and beauty of the world is however restricted to a "vacuum." Then in elementary classes the child's wandering mind is coerced with rewards and/or punishments to focus on dry subject matter doled out by the teachers. Educators busy themselves innovating ways to motivate the jaded spirit and efforts of their pupils or else take refuge in remedial schemes. Prizes, competition, "fun" games are no substitute for instilling the joy of learning.

It was my privilege and pleasure to witness this "joy" in children in a school at Kodaikanal, India. My personal experience in the application of the Montessori work in collaboration with Dr. Maria Montessori and Mario Montessori followed the second Indian Training Course given at Adyar, Madras. The Montessori class at first held children of three to five years who reveled in the exhilarating activities of purposeful exercises and rambles in nature. Seeing the eagerness with which these children absorbed all of the experiences and the richness of the learning environment, the parents began to bring in their seven and eight year olds and also gradually nine, ten, and eleven year olds. These latter came mostly for remedial work in reading, writing, and arithmetic, but as they were ex posed to the world of nature abundantly manifested in the hills, woods, slopes, and

streams of the mountains of Kodaikanal at an elevation of over 7,000 feet, their hearts were inspired and their minds filled with a thirst for knowledge and exploration.

As it was not possible to get books - it was wartime all over the world - Dr. Montessori indicated that the best book of all was there for the asking - the *Book of Nature*. Thus, with the guidance of Mario Montessori, there were rambles every day in the woods and meadows, up and down the rocks and slopes of water falls, crossing the brooks and fishing in the ponds, rowing to and fro in the lake, collecting beetles, butterflies and frogs' eggs, baby lizards, etc. Each time it was a lesson in geography, geology, biology, mathematics and even astronomy, observing the sun and stars and the elements and inhabitants of nature. Every ramble became an "intellectual walk." In the school environs terrariums and aquariums were made, seeds were planted, flowers and fruits were examined, and modelswere built to show various land and water forms, as well as the work of the sun, air and water. In order to reinforce all of these practical experiences,every evening under the direction of Dr. Montessori charts and packets ofcard materials were devised for illustrating the various detailed aspects of knowledge so that each child could do more individual study of the facts. Books for resources and references had to be borrowed from the librariesof the nearby Jesuit Seminary College and the American, English and Swedish high schools for children of foreign professionals working in different parts of India.

The excitement and eagerness of the children knew no bounds, and their spirit of inquiry would show no barriers. With their boundless energy they questioned, explored and experimented in all areas of culture. The small botanical garden, the miniature zoo to house specimens for temporary observation, and the wall illustrations of the sun, planets and spheres of the earth fascinated even the younger children who seemed to infuse the older ones with their spontaneous and enthusiastic delight in seeking to learn. This spontaneity carried over to the spirit and work of the adults around them. Two or three artists were constantly at work illustrating the scroll charts to depict the history of the earth before man appeared, and then the history of man and civilization. A carpenter was employed to con struct various models for illustrating certain geometric and scientific principles that were conveyed in the concrete as in the geological and mathematical formations.

At the end of the two years, Dr. Montessori reviewed all of the materials prepared to feed and enlighten this marvelous enthusiasm of the children and the adults in this seeming human "bee-hive." She herself was sparked into giving an inspiring and zealous finale to the work at Kodaikanal by teaching her first and only Advanced Course setting forth her Cosmic Plan of Education which she had devised for the development of children from six to twelve years of age. The manifestation of the innate spontaneous spirit of the children for work, exploration, and learning was a reenactment of the "miracle" of those "first children" Dr. Montessori had worked with in the slums of San Lorenzo, Rome. More remarkably we saw that even older children could be normalized by bringing them into contact with the most bountiful of healers - the world of nature. Here was also shown what Dr. Montessori stated, "The unknown energy that can help humanity is that which is hidden in the child." But to harness this energy the adult must show "greater care and finer observation of the real needs of the child leading to the creation of an environment in which the child can employ himself in a series of interesting objectives to be attained, through orderly and well-executed activity. The child is the greatest spontaneous observer of nature and needs to have a wide field of activity and to have opportunities for new experiences so he might engage in difficult enterprises. These bring satisfaction to the spirit of animation which prompts the child to make his way in the world. This active, ardent, meticulous, constant absorption in *LOVE* is characteristic of children, and man would degenerate without the child to help him to rise."

In conclusion, Dr. Montessori says, "Peace is what every human being is craving for, and it can be brought about by humanity through the child." But this can happen only if the adult society would organize a world of "progressive interests in which the children's intellectual life becomes insatiable in its search for *knowledge* . . . and wherein it is essential that each task arouses such an *interest* that it engages the child's whole personality for the human being is a united whole." But this unity has to be built up and formed by active experiences in the *real world* to which each is led by the laws of nature. And this real world is both the world of functioning humanity and the world of universal nature. □

Sowing The Seeds Of Science: Our Gift To The Future

Audrey Sillick was involved in Montessori education for over forty years. She was the founder and director emeritus of the Toronto Montessori Teacher Training Institute and a coauthor of the early childhood music curricula, Kindermusik for the Young Child and Kindermusik Beginnings. Audrey's particular areas of expertise concerned the role of movement in learning, the process of language acquisition, and the understanding of the child in nature. Audrey was a national speaker and workshop leader for early childhood music educators, Montessori educators, and the Earth Education Movement.

Sowing The Seeds Of Science: Our Gift To The Future

Audrey Sillick

Audrey Sillick's article, first printed in 1988, provides a theory base for Maria Montessori's foundational emphasis on the biological sciences and the sustainability of a living organic planet Earth as part of the educational process of "becoming more fully human." Ms. Sillick helps link primary-level biology with the special energy and cohesion of the Montessori view of Cosmic Education, the particular engagement of the sense that nature elicits, along with a celebration of the child's interactive process with nature, which, in fact, is our hope for the future.

When the explorer, Martin Frobisher, reached the coast of Labrador in 1576 he found the prospect forbidding. "There was," he tells us, "so great a store of ice all the coast along, so thick together, that hardly the boat could pass into the shore. At length, after diverse attempts, the company was commanded, if by any possible means they could get ashore, to bring whatsoever they could first find, whether it were living or dead, rock or stone, in token of Christian possession…and some brought flowers."

In many ways, the flowers were the true symbol of our continent's wealth. Explorers and pioneers who followed Frobisher learned much from the aboriginal peoples of the land. The journals and diaries they left speak of the Indians' sophisticated knowledge of the use of common plants as food and medicine. These remarkably accurate and detailed records have contributed to the foundation of modern systematic botany, not to mention their importance to plate tectonics theory, which has revolutionized geology. As settlement increased, various gifted amateur botanists, many of them women, delighted in chronicling their novel surroundings, documenting their observations with precise detailed sketches and paintings, collecting and cataloguing seeds and specimens. In addition to providing invaluable historical information, their writing remains a tribute to their

ability to transcend the destructive practices and attitudes prevalent in their day, and which unfortunately remain a negative influence into our own times. The ethic of domination remains the shadow side of human relationship with nature.

Viewed from a distance, the astonishing thing about the planet Earth is that it is alive. Aloft, floating free, beneath the moist gleaming membrane of bright blue sky, is the rising Earth, the only exuberant body in this part of the cosmos. In the organic wholeness of life, humans remain a part of its essence. Our land, yours and mine, is today dangerously close to sundown. Yet, for us, as Montessori educators, there is a choice. We are committed to "experimental science," (to use Montessori's own term). Such a science needs a cosmic vision, a sense of humankind's belonging to the great order of the universe, destined to fulfill a cosmic task. In the evolutionary experiment, living things convert an essentially hostile environment into a life-supporting one, making possible the continuity of life in all its diversity. Created by living organisms, maintained by living organisms, the biosphere forms a breathing interacting sphere of life.

When John Muir suggested that each of us is connected to everything else in the universe, his suggestion was not simply rhetorical. Humankind has made a long journey with worm, fish, and reptile to assume mammalian form before taking the primate path. We humans of enlarged brain, of the long period of infantile dependence, of speech and symbol, of self-conscious-

ness and reflection, cannot be limited by biological concepts. But we cannot ignore them either. Nature is part of our humanity, and the fact of interrelatedness and interdependency is a general principle of life. The reason for studying biology is the old admonition, "know thyself." We cannot, however, really know ourselves if that is all we know. True understanding can come only from knowledge of life in general.

Biology, set within an ecological framework, includes both human and nonhuman elements in a reciprocal interplay, every life form and process linked in a dynamic and diverse global community. As Montessori educators, we are committed to an experimental science which takes a radically different view of the process and the goal of education – the fostering of the fullest degree of humanness.

Abraham Maslow once wrote, "The function and goal of education, the humanistic goal is ultimately becoming fully human: development to the fullest the human species can attain or that a particular individual can come to: it is helping the person become the best he/she is able to become." That phrase "ultimately becoming more fully human," has echoed down the corridors of the mind since classical times. Montessori's stated aim for education is to further the formation and integration of the human personality from birth to adulthood. The child's creative unconscious guides that formation, and the facilitative environment nurtures it toward consciousness. Inner and outer worlds are always linked, each acting upon the other and coevolving. This is a dynamic process, involving the child in an interior work. To achieve the balance and harmony that has long eluded Western education, we must strive to unite the

powers of reason and the rational mind with the empathetic depth of the intuitive mind. Physicist Fritjof Capra puts it this way, "Rational thinking is linear, focused and analytic. It belongs to the realm of the intellect whose function it is to discriminate, measure,and categorize. Intuitive knowledge is based on adirect nonintellectual experience of reality arising in an expanded state of awareness. It tends to besynthesizing, holistic, and nonlinear."

I would suggest that the natural sciences, and biology in particular, are uniquely suited to engage young children on an intuitive receptive level. Children are able to look and to listen in an absorbed and selfless way. We have all witnessed the child's intense attention watching a tiny bug: the insect undisturbed, unchanged, and unintruded upon by the child. Only such a self-effacing observer will be permitted to penetrate its secrets. That ability, to keep hands off and mouth shut, to be patient, to suspect action, to be receptive and watchful could be called a Taoistic approach. It is an attitude toward nature rather than a technique in the ordinary sense. Perhaps it should be called an anti-technique.

When I have described it to people, they have usually sniffed and said, "Oh yes, simple descriptive science." Often I am not sure they have taken my meaning. Real receptivity of the Taoistic sort is a different achievement. To be able to listen without presupposing, classifying, improving, evaluating, without dueling with what is said—such anticipatory listening is rare. Children are far better able than adults to look and listen in such an absorbed and selfless manner.

How do we best develop this attitude in the child? For educators, two concerns are vital: our own receptive openness to the sensory qualities of the natural world and our desire to give children the special gift of time. For many people the road to the natural world has been through identification, a process that can be sterilizing. There is an ever present temptation to organize, classify, simplify, abstract, and label to the point of distraction, when the constructs of the mind itself become the reality. Names are for convenience,

for reference, to make ourselves understood. But in themselves they are nothing. Once we label something, there is a temptation to assume we know it.

For language to be meaningful, it must capture the child's experience. And equally important, children need time. Too many children are being hurried through childhood with little time to be receptive or thoughtful or to integrate their experiences. We must allow a measure of unhurried time to capture the precious ingredients of a special experience. Children's lives are a celebration expressed in activity in which feelings, senses, movement, and thought are fused harmoniously.

We must never forget that whatever certainties science affords, depend in the last analysis on what trained minds can see, hear, taste, touch, and smell. For the young child, the natural environment is a source of delight; the sounds, textures, colors, shapes, patterns and harmonies; the sensate joys, the enchantment and endless surprises engage them on the affective level. The natural environment is both place and teacher, leaving impressions that incubate in the absorbent mind. Those experiences remain even while the conscious attention is directed elsewhere. Montessori speaks of the engagement with the real living world as being nourishment for the imagination that is "a force for the discovery of truth."

She cautioned against intrusive explanations at the moment of wonder and mystery: a pink earthworm disturbed by a probing trowel, scuttling sowbugs beneath a log in damp togetherness,a salamander under a rock on the forest's littered floor. Questions will follow, but for that wondrous moment, silence is golden with feeling. When young

children become acquainted with living beings, Rachel Carson tells us, "then we wish for knowledge about the object of our emotional response. Once found it has lasting meaning. It is more important to pave the way for the child to want to know than to put him on a diet of facts he is not ready to assimilate." The value of knowledge is not only in what is known, it is in the change wrought in the knower. Although knowledge and familiarity enhance the appreciation of life, the wide range of feelings, from love and admiration to fear and anger, are strong sources of motivation to appreciate and protect. The natural sciences can be a way of marrying that which is loved with that which fascinates. Such a mystery is the beginning of a special love relationship with life.

A study of over 300 autobiographical recollections of artists and writers from many cultures and eras revealed something they shared in common. These creative persons, from the sixteenth century to the present day, write of returning in memory to their early life, a special period between five and eleven years of age, in order to renew the power and impulse to create at its very source. In their memories, these gifted individuals tell of experiencing the natural world in highly evocative ways, with an awareness of their own unique separateness and identity, but also as a continuity, a renewal of relationship with nature as process. It does appear that adult memories of childhood refer to a deep desire to renew the ability to perceive as a child, and to participate with the whole bodily self in the sights and sounds of the external world of nature.

Contact with the world through the natural sciences evokes a multitude of different responses ineach child. It is the "real stuff" of the imagination. Living organisms and processes must be taken ontheir own terms, not ours. The imagination is the link between the mind and the heart, between intellect and sense, between thought and feeling. It holds the key to human understanding, as so many poets and artists have demonstrated. James Joyce expressed it in Ulysses, "I am a part of all that I have known." The creative imagination of the child is not the result of an accumulation of information, but of a continued transaction with the mystery and wonder of a living world. The child's infinite curiosity draws him into self-directed activity vital to the process of self-formation and normalization. Sofia Cavalletti has written that wonder is a dynamic value that allows activity and contemplation to be inseparably blended with it.

The facilitative environment is a transactional one which children transform, and by which they are transformed. Young children learn to think with the whole body, and the Montessori environment demonstrates a valuing of the body as the instrument of expression of the self, a thing of beauty, and a rich source of pleasure expressedin coordinated movement.

The cultivation of sensitivity, empathy, respect, and care also resides in a consistently caring environment of trustworthy, but not perfect, human beings. Values and attitudes of caring cannot be implanted, grafted, or legislated; they simply have to be there. Children are born with a sense of wonder, which heightens their awareness of the world about them. They are open and spontaneous, enthusiastic and curious. Every day they awaken to surprise, to discover fresh new things in everyday occurrences. An enthusiastic adult to share their joy is a valuable companion. The natural sciences call the child into a vital relationship with the Earth and its family, as a participator in a journey of discovery of the ground under their feet.

In terms of a language environment, could we do more to enhance the gift of speech? Natural science can provide children with an alphabet fortheir exploration as well as the means of concept formation. Language is the ultimate expression of this elevated consciousness, the final flowering of the growth process linking our human nature with the universe.

It is the gift every newborn brings to humanity. Natural science can be "the poetry of the intellect," since encounter and engagement with living beings can be equally poetic, spiritual, and philosophical. Language reflects our view of the

world. And after all is said and done, it is a uniquely human activity, a gift with which the child finds renewed significance. Children, engaged affectively with a living world, open their human nature to the full dimension of its being. The love, joy, and stimulation of learning may be the single most important outcome of that relationship.

Children excited about learning are well prepared for the elementary. In the Children's House, knowledge absorbed by "good doing" is multi-sensory, laying the foundation for research. By moving easily and comfortably between indoor and outdoor environments, children are encouraged to go to the source, to always verify. A facilitative environment at this primary level provides the means for a systematic ascent toward knowledge. The order, focus, and sequence in botany and zoology are an important part of a systematic approach, a sound place to begin. Shapes of leaves, parts of plants, and animal classes are the basic ingredients for formal biology. The leaven for research is seeded in the good soil of this primary environment. Only a spark is needed to ignite flammable material at the elementary. The children, when they encounter their natural environment, grow both outward by exploration and discovery and inward, as they use their senses to learn who they are. Sigmund Olsend wrote,

"While we are born with curiosity and wonder and our early years full of the adventure they bring, I know such inherent joys are often lost. I also know that, being deep within us, their latent glow can be fanned to flame again byawareness and an open mind."

Like the early settlers who collected flowers as a symbol of the continent's wealth, we must rediscover the beauty and integrity of our mother Earth and then share these discoveries with our children. We cannot share what we do not possess. Henry Bexton in *The Outermost House,* wrote,

"Nature is part of our humanity, and without some awareness and experience of that divine mystery man ceases to be man. When the Pleiades and the Wind in the Grass are no longer part of the human spirit, a part of every flesh and bone, man becomes, as it were, a kind of cosmic outlaw, having neither the completeness and integrity of the animal, nor the birthright of a true humanity."

Man can husband nature's resources to her own best interests, only if he first loves her for her own sake.

There is no end to the marvels and wonders of our wonderful planet. Before world ectoplasms are changed beyond recall we must bend every effort to allow children to experience the delights, beauty, and wonders of the nature world. Only then can they be a part of a judgment about its future. They will decide if unthinking and irreverent intrusion shall continue and whether the ruthless exploration of the Earth is absolutely necessary. As educators, we are aware that never has the time been more urgent, or the message more vital. Ours is the privilege to make the largest single investment in the future of our planet: We serve the child, who is Earth's richest resource.

All photos courtesy of Montessori School of Beaverton, Portland, Oregon

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Experiences In Nature: Resolute Second-Plane Directions Toward Erdkinder

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Experiences In Nature: Resolute Second-Plane Directions Toward Erdkinder

Gerard Leonard and Kathleen Allen

Gerard Leonard and Kathleen Allen describe a variety of nature experiences as a part of the Montessori elementary tradition, beginning with a warning about the way contemporary life constrains children's experience of nature. Through a lyrical rendering of the nature-based expressions of children, Leonard and Allen look at a variety of approaches to nature study through the senses, the enrichment of gardening, daily journals of nature observations, poetry writing, bird watching, biographies of natural scientists, drawing, use of the microscope, and classification. Finally, they present a list of curriculum inclusions for the elementary, with concluding remarks summarizing the role and uniqueness of studying the "book of nature."

No matter what we touch, an atom or a cell, we cannot explain it without knowledge of the wide universe. (Maria Montessori, To Educate the Human Potential 6)

And for this knowledge of the wide universe to take root, the child needs, in addition to hearing the inspiring great story of our cosmos and exposure to all the scientific disciplines, the experience of simple natural and timeless acts such as sowing seed, gathering the crops, and celebrating the bounty with friends.

> In Spring we planted seed,
> And by degrees the plants
> Grew, flowered, and transformed
> The light to food, which we
> Brought in, and ate, and lived.
> The year grown old, we gathered
> All that remained. We broke, Manured, prepared the ground
> For overwintering,
> And thus at last made clear
> Our little plot of time,
> Tropical for a while,
> Then temperate, then cold. (Berry 203)

How children love to experience "the little plot of time," the round of the year, the seasonal growth and decay. But more than just experience, they want to really feel part of nature's great circling. Maria Montessori's vision was that the children should "live in Nature."She saw that children naturally revel in forest and field and stream, and want to be intimate with their kin, the Earth's creatures. And she came to believe more and more strongly, especially after the experiences she and her son Mario had with children living in nature in India, that a deep intimacy with the natural world was not only very healing for the child but prepared him well for the next plane of development, for his relationship to society, to the human family.

Art from De Natuur in de Amsterdamsche Montessori School, A.F.J. Portielje and R. Joosten-Chotzen, Amersterdam, 1932, courtesy of Leonard/Allen collection

"Actually, nature frightens most people," wrote Maria Montessori in 1948, just a few years before her death and after some forty years of observing children and families worldwide. She continued: "They fear the air and the sun as if they were mortal enemies. They fear the frost at night as if it were a snake hidden in the grass. They fear the rain as if it were a fire" (*The Discovery of the Child* 70). This has certainly not changed in the sixty years since these words were written; rather, the fear has been compounded over the last several generations to where we can easily accept Richard Louv's portrayal in *Last Child in the Woods* as a most believable warning of where we are heading.

Renilde Montessori is very direct when it comes to this question of our fears. She says in her book *Educateurs sans Frontières*: "Where our children are concerned, it is our

[1] In *The Discovery of the Child,* a brilliant chapter titled "Nature in Education," Maria Montessori elaborates on this idea beautifully and with a practicality clearly based on lived experience with children.

bounded duty to corral our fears, look at them dispassionately, sort and classify them and use them as the guiding element they are rather than letting them stampede and overrun us" (47). The elementary years are a time of boundless energy, strength, and, yes, fearlessness. This we know from observations all over the world, and this we know from memories of our own childhoods.

Listen for a moment to just a taste of what we are missing if we continue to wall off ourselves and our children from nature. Being in nature, observing closely and patiently, invariably elicits a special kind of writing, and this seems to be particularly accessible to children. Here are a few pieces to ponder, all deriving from being in nature and simply looking:

> *"The monarch sits quietly, perched upon a nearby flower. He is probably the last of his kind before the incoming frost. The wind blows cool in my face. I know it's coming ... fall.*
>
> He opens his colorful wings and leaps gracefully from one flower to the next. His wings glint against the sun and he flies away. He soars elegantly in the September wind, lands and finishes up with a flutter of his delicate wings. He is beautiful, his warm colors make me want to smile ... a warm hug, a toasty fire, a soft blanket and a hot piping cup of hot chocolate with marshmallows..... mmmm! He flies away ... never to be seen again by my eye. (Julia, age eleven)

"The Crows!"

The crows, here they come, darting to the ground.
The crows, the crows, they're everywhere,
The crows, on the ground, walking all around,
The crows, the crows, they're everywhere.
Here more come, in the air,
The crows, the crows, they're everywhere.
(Zeke, age eight)

The following writing is excerpted from a longer piece where the girl observes a tree she had previously observed and written about in a different season:

> I smooth out my page. I only have so much time, but I don't want to rush. I just want to enjoy my beautiful friend and its surroundings. My tree shades me with its winding trunk, stretching into branches with leaves, a juicy-green sparkle. My tree's roots pop out of the ground just like a mole popping out of a certain hole in a million. Birds are chirping sweetly in my wonder-land. Pine needles scatter the ground at my motion- less feet. I hug my warm chunky textured tree, I feel moved, well, wouldn't you hugging one of your best friends? I love my tree and always will forever. (Emma, age nine)

In our work with elementary-aged children we never cease to be amazed by how much they absolutely love animals and plants. Their thirst for both knowledge of and real connection to every kind of animal and plant is pretty inexhaustible. One could create an entire curriculum around nature study, and the children would be endlessly fully engaged. In fact that's what our cosmic plan is, deeply connecting with mind and heart to our world and its life. We just have to work hard against the pervasive cultural pathology that disconnects children from nature. We must not simply stay indoors with our timelines and classified nomenclature, as wonderful and attractive as they are to the children.

A child can enter the disciplines of botany and entomology with vigor and great intelligence, but first he must be familiar with one particular tree and with the ways of one tiny "six-footed" little ant: "If we study, for example, the life of plants or insects in nature, we more or less get the idea of the life of all plants or insects in the world. There is no one person who knows all the plants; it is enough to see one pine to be able to imagine how all the other pines live" (Montessori, From *Childhood to Adolescence* 35).

For this epiphany of connecting the one to the many, the child needs to be often in the garden, feeding the domestic animals, assiduously caring for the wild birds in winter, exploring in the woods, fishing with a net in a vernal pool, climbing a hill or even a mountain, lying on the grass under the stars watching the Perseids shooting across the sky every

August. "How often is the soul of man—especially that of the child—deprived because one does not put him in contact with nature" (35).

Our children have to encounter nature on multiple levels. First of all and most importantly, the encounter is through the senses, by sight, by touch, via sound, and kinesthetically. This begins with great intensity before age six but the immersion in the colors, tastes, songs, and exploration of the natural world must continue to be deepened during the elementary years. Emotional experiences are essential. Feelings of real affection, of caring for other living beings, emotions of tenderness, gratitude, and wonder in the face of nature's ways are a treasure house not to be missed during childhood. And lastly, and most powerfully during the elementary years, the encounter is via the intellectual disciplines, through biology, biogeochemistry, taxonomy. All of these disciplines are woven through the elementary years such that Earth's history and the interconnections of geology and biology are unveiled, and the wonderful tapestry of living forms is presented as an intelligible system of classification.

Courtesy of Vanessa Toinet, Ecole Montessori du Morvan, Bard-le-Regulier, Burgundy, France

So first of all, it is essential that our children get their hands in the soil, in the "good clean dirt," as grandmother used to say. Our children have to learn gardening, the whole of gardening, from preparing the ground for the seed, to harvest and the further preparations for the next cycle. This is so vitally important because this experience is the most direct way for a child to access the laws of nature, to participate in nature's mysteries, and to make both a heart connection and a nascent scientific observer's awakening to plants, insects, animals, fungi, water, sunlight, and so on. We have watched children keeping a daily nature journal of their observations of different seeds as they sprout and grow. A deep kinship with the plants being studied and cared for is developed, not to mention the incredible refinement of the powers of observation and the patient waiting that is fostered. Children are born naturalists, and not surprisingly the lives, diaries, and drawings of the great historical and contemporary naturalists are a real inspiration and source of much interest for them as they pursue this work.

There is so much to see in a well cultivated garden. J. Henri Fabre, the great French entomologist so admired by Maria Montessori, did most of his classic observations of spiders, caterpillars, bees, and other insects in field and garden. Unbroken time, patience, a writing journal, a sketchpad, and a hand lens are the indispensable tools. Daily access is also vitally important. For in Fabre's own words regarding his observations of garden spiders, "What I did not see very plainly yesterday I can see the next day, under better conditions, and so on any of the following days, until the phenomenon under observation is revealed in all its clearness" (231).

And "the child, who more than anyone else is a spontaneous observer of nature, certainly needs to have at his disposal material upon which he can work" (*Montessori, The Discovery of the Child* 73). These materials are plants, flowers, herbs, and domestic animals to care for.

Courtesy of Mr. Katsuhiko Yorita, Information Center, Okinawa, Japan, submitted by Takako Fukatsu

Maria Montessori's very first Casa in Rome (1907) had a cultivated garden in the adjoining courtyard and little plots for each child to grow and care for plants. The first Casa in Milan (1908) had little houses for animals in the courtyard. In *The Montessori Method* (1912) she wrote of how the keeping of the little gardens was not only a part of the transformation of the children but also of the social reform of the surrounding community of adults. She mentions Lucy Latter, the British educator and horticulturalist, whose book *School Gardening for Little Children* had such a wide influence. Nature in education and its wider social ramifications was very much in the forefront of her mind.

Think of all the wonderful experiences that come from "living" in the garden over many months and years: preparing for planting, planting the seeds or seedlings, weeding, fertilizing, composting, watering, protecting the plants, cultivating, propagating, harvesting, learning preservation and storage methods, putting the garden to rest for winter. And think of how the disciplines of botany and soil science are experienced in such a deeper

way when the garden (or greenhouse in a cold climate) is an integral part of the daily prepared environment of the Montessori classroom.

"The most pleasant work for children is not sowing, but reaping, a work, we all know, that is no less exacting than the former. It may even be said that it is the harvest which intensifies an interest in sowing" (Montessori, *The Discovery of the Child* 75). We have often seen the great joy when children, for example, harvest all the lettuces in the garden and create wonderful salads for themselves and their families. They love to celebrate their work and nature's bounty.

Maria Montessori considered the garden so important that she wrote: "plans for a garden run parallel with those for the building of a Children's House" (*The Discovery of the Child* 78). It was really inconceivable to her that a prepared environment for children could exist without a garden.

We also have to remember that the sensorial encounter, the "living in nature" must occur in non-cultivated environments, especially in woodland, field, and stream. Free play outdoors is so essential and the precious time to build forts, dams, miniature villages, and so on. Every six- to twelve-year-old thirsts to do these things. Unfortunately, more and more children in the "developed" world are not being given the time, freedom, or environments where they can do these things. The tendency to "improve" or "landscape" every inch of school properties and in so doing eliminate any spot of wasteland or semi-wild woodland is something to be monitored if we are to be advocates for the child's right to explore the natural world. Of the forest Dr. Montessori eloquently wrote:

> "There is no description, no image in any book that is capable of replacing the sight of real trees, and the life to be found around them, in a real forest. Something emanates from those trees which speaks to the soul, something no book, no museum is capable of giving. The wood reveals that it is not only the trees that exist, but a whole, inter-related collection of lives." (From Childhood to Adolescence 35)

Certainly, here is poetry and truth, and we might say an admonition to us: Can we say that the child at age twelve has really "lived in nature" during the critical first- and second-plane years? If the answer is yes, one can then begin to imagine how this child, grounded in his natural world, is prepared to be the "Erdkind" of the third plane of development, eager to work out the societal adaptations needed for his time, place, and circumstances.

In order to more fully embody nature and the biological sciences, children also need to see and hear of examples of people throughout history who were inspired by nature. They need to know of the writers, artists, and composers who drew upon the natural world for their work. It is important to read to them examples from writers such as Wendell Berry, Annie Dillard, Mary Oliver, and Edwin Way Teale.

To glimpse the intensity of this relationship to nature and to inspire creativity in composing nature poetry, read this poem by Mary Oliver to your children:

> "Of What Surrounds Me"
>
> Whatever it is I am saying, I always
> need a leaf or a flower, if not an
> entire field. As for the sky, I am so wildly
> in love with each day's inventions, cool blue
> Or cat gray or full
> of the ships of clouds, I simply can't
> say whatever it is I am saying without
> at least one skyful. That leaves water, a creek or a well, river or ocean, it has
> to be there. For the heart to be there. For the pen
> to be poised. For the idea to come. (32)

These words are simple and deep, but clear enough for an older elementary child to grasp.

Other areas of creative endeavor in which one can explore nature themes include art, music, dance, and drama. Study the nature-based art of Jean-Franc¸ois Millet, John Constable, Claude Monet, and Georgia O'Keeffe. Listen to nature-related music by composers such as Antonio Vivaldi in the visually descriptive piece *The Goldfinch*; and Georg Frideric Handel's *The Cuckoo and the Nightingale*. An interesting footnote to this would be the work of Dr. Tony Phillips at State University of New York at Stony Brook. Dr. Phillips, a professor of mathematics, has been analyzing native bird songs, slowing down the sound, playing these pieces on the piano, and notating the songs. These are fascinating pieces to play on the tone bars.*2*

Elementary children need to hear the stories of the natural scientists throughout history, both the well-known and lesser known. Figures such as Charles Darwin, Jane Goodall, Carolus Linnaeus, Rachel Carson, George Washington Carver, Gregor Mendel, and Anton van Leeuwenhoek are definitely on the list. There are many others, especially those that inspired Dr. Montessori, such as J. Henri Fabre and Ernst Haeckel, or those of the American nature-study and conservation movements of the late nineteenth and early twentieth centuries, such as John Muir, Liberty Hyde Bailey, and Anna Botsford Comstock. During this time period there was written a wealth of literature for children and teachers. Notable examples include *Life and Her Children* by Arabella Buckley (1840-1929), published in 1880. Buckley was the secretary of Sir Charles Lyell, geologist, and a friend of Charles Darwin. Her many books for children are deeply grounded in evolutionary theory and portray the classification of animals as understood at the time. It is important to have had exposure to these heroes of biology and nature study, to have heard of their particular life-changing experiences, and to experience their original words and feel how the soul is stirred, nourished, and inspired by such writing.

Drawing is an essential experience that supports children in their developing powers of observation. Children must record what they see in the natural world by illustration (and composition). Dr. Montessori identified this need for children to experience them-

selves as observer/illustrators. After the beginning work with geometry, she experimented with having the children draw geometric designs, using rulers, compasses, protractors, squares, and pen and ink. All the geometric figures were reproduced as designs and gathered into a portfolio. Thus, not only did the children acquire a deep understanding of the geometric forms, they developed coordination and hand-eye skills that laid the foundation for further work in drawing. "To confer the gift of drawing we must create an eye that sees, a hand that obeys, a soul that feels; and on this task the whole life must cooperate. In this sense life itself is the only preparation for drawing. Once we have lived, the inner spark of vision does the rest" (Montessori, *The Advanced Montessori Method – The Montessori Elementary Material* 309).

When the children had practiced these geometric exercises for a while, she then introduced opportunities for observation in nature:

> "The observation of nature (flowers and their different parts—pollen, leaves, a section of some part observed under the microscope, plant seeds, shells, etc.) serves to nourish the child's aesthetic imagination. The children also have access to artistic designs, collections of photographs reproducing the great masterpieces, and Haeckel's famous work Nature's Artistic Forms, all of which equipment is so interesting and delightful to a child." (303)

The work with natural objects was a perfect next step for the drawing experience, and the children began to enjoy simple botanical dissections and working with microscopes: After carefully dissecting and identifying the parts of a violet, "with great joy they began to draw them; and they were accurate, skilled, tireless, and patient, as they are in everything else" (313-314).

This type of work is the same done by great researchers and naturalists in the field. Jane Goodall has kept meticulous notes and sketches as she studied the chimpanzees in Gombe Stream National Park in Tanzania over a period of forty-five years. (3)

Children are innately drawn to illustrate what they see in nature. They employ pen and ink and watercolors with ease, if the environment is prepared for this. These exercises

have to be offered as a regular work in the class, just like grammar and multiplication, not as a specialty that occurs periodically.

There must be time, especially quiet, reflective time, in nature, in the garden, or studying the aquarium. This sacred time in the natural world to draw what is seen, as well as to write about it, leads to the "eye that sees ... a soul that feels."

Our approach to the discipline of biology is based on the child's psychology, on his growing interests throughout the first and second planes of development. There is a building up of substantive knowledge of the discipline in a systematic way. Knowledge of the anatomy and physiology of the major phyla is gradually acquired together with a comprehensive taxonomic scheme. The scientific nomenclature is introduced over a nine-year period. The understanding of biology is, in the Montessori elementary classroom, always related to the timeline of life and the emerging story of the evolution of life on Earth. The maintenance and history of the Earth's atmosphere, hydrosphere, and lithosphere through the work of Earth's living creatures is a unique aspect of our elementary science. In addition, the elementary child is offered a fundamental understanding of the nature and role of the key elements of carbon, hydrogen, oxygen, nitrogen, and a vision of the great global cycling of water, carbon, and nitrogen.

As Montessori educators, we must stay current in our knowledge of the sciences. We must read, discuss with colleagues, and support our classroom environments as lively, stimulating laboratories. For example, Richard Dawkins' *The Ancestor's Tale* takes a different look at the evolution of life. Dawkins moves from the present back into the past, noting each important event of evolution along the way.

He calls these "rendezvous points," where we meet a "concestor," our most recent common ancestor. He tells the tale in the spirit of Chaucer's *Canterbury Tales*. Many of these stories are perfect little fables to inspire thought and further research among elementary students. For example, "The Hippo's Tale," which is also "The Whale's Tale," tells

[3] See an image of Dr. Goodall and a sample page from her notebooks at this site: http://bio1151.nicerweb.com/Locked/media/ ch01/ inductive.html.

how we now know that both hippopotami and cetaceans, closely related, are descendants of land mammals. In classification, the super-order Cetartiodactyla includes cetaceans (whales, dolphins, etc.) and the artiodactyls (even-toed ungulates: hippos, deer, etc.). Every tale in this book can become a point of interest for the Timeline of Life.

In order to be ready for the third-plane life sciences, Montessori elementary students need the following real experiences and knowledge base:

- Experiences in the field with real nature
- Ability to identify the common native plants and animals of their region
- Familiarity with domesticated plants and animals
- Ecology and relationships among the organic and inorganic
- Taxonomy and its current nomenclature (e.g. Cnidaria in place of the old term Coelenterata)
- All current organizing principles, such as Domains and Kingdoms, not a simple plant/animal dichotomy
- The anatomy, physiology, and main characteristics of the Domains and Kingdoms
- Deep understanding of the Timeline of Life, including the life forms of the Pre-Cambrian
- A clear introduction to the Bacteria and Protists in the later years of the elementary—we must move from the seen to the unseen (microscope work is essential here, as is a real laboratory experience)
- The study of cells—Prokaryotes and Eukaryotes, animal and plant, basic knowledge of organelles and cellular processes
- A simple understanding of biochemistry

Biology must be intimately connected with history and geography. We are fortunate as Montessori educators that we are shown a systematic plan for biology as part of our

training. Look through any commonly used high school biology text, such as Campbell and Reese's *Biology: AP Edition*. Here you will note the main unit headings:

- The Chemistry of Life
- The Cell
- Genetics
- Mechanics of Evolution
- The Evolutionary History of Biological Diversity
- Plant Form and Function
- Animal Form and Function
- Ecology

These are the worlds to open to the elementary student, not a detailed study, but an introduction to these concepts, planting the seed. All of these topics should be introduced during the elementary years and most are already represented in our classroom materials. One large area of biology study that may not be as developed is the study of the cell. Just as we present the golden bead unit as the basic building block of mathematics and the letters as the basic unit of language, so we must present the cell as life's fundamental unit of structure and function.

Now let us return to experiences in nature, for these are the bedrock upon which the aesthetic and intellectual work is founded. Dr. Montessori writes of five gradations of ascent in the study of nature. It starts out with the child's being initiated into the world of just observing the phenomena of life. Next, he is initiated into foresight—he knows that the life of the plants and animals he cares for depend on his diligence. Third, patience and "confident expectation" awaken, a form of faith or philosophy of life. Fourth, a feeling for nature's marvels develops, and finally, she notes: "The child follows the natural way of development of the human race" (*The Montessori Method* 156).

We can understand her words well if we put them in the context of the nature-study movement of the time. The nature-study movement began in the United States in the late

nineteenth century and continued into the early twentieth century. Its purpose was to introduce children to the natural world in a way that was practical, spiritual, aesthetic, and scientific. The movement was closely linked to the budding conservation movement. Its roots lay in the philosophy of Jean-Jacques Rousseau and Louis Agassiz. Cornell University became the center of nature-study with professors Liberty Hyde Bailey (1858-1954) and Anna Botsford Comstock (1854-1930) as prominent leaders.

The following words of Professor Bailey echo Dr. Montessori's faith in nature as central in education: "The light, the dark, the moon, the cloud, the rain, the wind, the falling leaf, the fly, the bouquet, the bird, the cockroach—they are all ours. If one is to be happy, he must be in sympathy with common things. He must live in harmony with his environment" (31).

Anna Botsford Comstock, the author of the *Cornell Nature Study Leaflets*, was a scientist-illustrator of renown. Her famous book *Handbook of Nature Study* (1911) is still in print today and is a great resource for teachers (4). Both Professor Bailey's and Professor Comstock's desire was to cultivate in the child a love of the outdoor environment, a love of beauty in nature, and an ability to observe simple, common natural things. Such experiences would, they believed, truly develop the child. Their approach was to follow the child's interests, not the subject matter. Dr. Montessori combined this approach with a parallel intellectual study and presented them as complementary and as both necessary for a deep understanding of our natural world.

What we elementary Montessori teachers have to remember is that the real experiences in nature come first, and not only that, but they must continue to be the centerpiece of what we call Cosmic Education as we gradually grow the intellectual disciplines and introduce the scientific materials for exploration and development.

Lena Wikramaratne relates that in India, where the "cosmic plan" for the elementary years was fleshed out, that the guide indicated by Dr. Montessori was *The Book of Nature:*

> Thus, with the guidance of Mario Montessori, there were rambles every day in the woods and meadows, up and down the rocks and slopes of waterfalls, crossing the brooks and fishing in the ponds, rowing to and fro in the lake, collecting beetles, butterflies and frogs' eggs, baby lizards, etc. Each time was a lesson in geography, geology, biology ... every ramble became an "intellectual walk." (30)

This constant grounding in nature is also for the teachers, not only for the children. In her Kodaikanal interview with David Kahn, Miss Wikramaratne said that the trainees "must go out into the natural world or else they won't be able to show anything to the child" (50).

And Dr. Montessori would have us prepare thus:

> I would therefore initiate teachers into the observation of the most simple forms of living things, with all those aids which science gives; I would make them microscopists; I would give them a knowledge of the cultivation of plants and train them to observe their physiology; I would direct their observation to insects, and would make them study the general laws of biology. And I would not have them concerned with theory alone but would encourage them to work independently in laboratories and in the bosom of free Nature. (*The Advanced Montessori Method – Spontaneous Activity in Education* 138)

So let us corral our own fears and feel comfortable in the bosom of nature. Let us become naturalists with our own journals and sketchpads and enjoy sauntering forth in nature and exploring with our own hand lenses and microscopes. Let us grow herbs, plant fruit trees, and keep chickens or bees so that we may offer the children their birthright, the chance to deeply know and love their natural environment during the years before adolescence.

[4] Anna Botsford Comstock was the first college professor to actually take her students outside to study nature. Her scientific illustrations, particularly wood-engravings of insects, were exhibited nationally. In 1894 she established the nature study curriculum in New York public schools. She was also elected to the National Wildlife Federation's Conservation Hall of Fame in 1988. Both her life story and her beautiful drawings are worth sharing with children.

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Ecopsychology: How Immersion In Nature Benefits Your Health

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Ecopsychology: How Immersion in Nature Affects Your Health

Jim Robbins

A growing body of research points to the beneficial effects that exposure to the natural world has on health, reducing stress, and promoting healing. Now, policymakers, employers, and healthcare providers are increasingly considering the human need for nature in how they plan and operate.

How long does it take to get a dose of nature high enough to make people say they feel healthy and have a strong sense of well-being?

Precisely 120 minutes.

In a study of 20,000 people, a team led by Mathew White of the European Centre for Environment & Human Health at the University of Exeter, found that people who spent two hours a week in green spaces — local parks or other natural environments, either all at once or spaced over several visits — were substantially more likely to report good health and psychological well-being than those who don't. Two hours was a hard boundary: The study, published last June, showed there were no benefits for people who didn't meet that threshold. (1)

The effects were robust, cutting across different occupations, ethnic groups, people from rich and poor areas, and people with chronic illnesses and disabilities.

"It's well-known that getting outdoors in nature can be good for people's health and well-being, but until now we've not been able to say how much is enough," White said.

[1] M.P. White, I. Alcock, J. Grellier, et al. Spending at least 120 minutes a week in nature is associated with good health and wellbeing. *Sci Rep* **9,** 7730 (2019).

"Two hours a week is hopefully a realistic target for many people, especially given that it can be spread over an entire week to get the benefit."

The study by White and his colleagues is only the latest in a rapidly expanding area of research that finds nature has robust effects on people's health — physically, mentally, and emotionally.

"When I wrote *Last Child in the Woods* in 2005, this wasn't a hot topic," said Richard Louv, a journalist in San Diego whose book is largely credited with triggering this movement and who coined the term Nature Deficit Disorder. "This subject was virtually ignored by the academic world. I could find 60 studies that were good studies. Now it's approaching and about to pass 1,000 studies, and they point in one direction: Nature is not only nice to have, but it's a have-to-have for physical health and cognitive functioning."

These studies have shown that time in nature — as long as people feel safe — is an antidote for stress: It can lower blood pressure and stress hormone levels, reduce nervous system arousal, enhance immune system function, increase self-esteem, reduce anxiety, and improve mood. Attention Deficit Disorder and aggression lessen in natural environments, which also help speed the rate of healing. In a recent study, psychiatric unit researchers found that being in nature reduced feelings of isolation, promoted calm, and lifted mood among patients. (2)

The growing body of research — combined with an intuitive understanding that nature is vital and increased concerns about the exploding use of smart phones and other forms of technology — has led to tipping point at which health experts, researchers, and government officials are now proposing widespread changes aimed at bringing nature into people's everyday lives.

[2] Huilbrie C. Pieters, Leilanie Ayala, Ariel Schneider, et al. "Gardening on a psychiatric inpatient unit: Cultivating recovery," *Archives of Psychiatric Nursing* 33, Vol. 1 (February 1, 2019): 57-64.

For example, researchers and policymakers now talk about "park deserts" in urban areas. Cities are adding or enhancing parks, and schools and other institutions are being designed with large windows and access to trees and green space — or blue space, as in aquatic environments. Businesses are increasingly aware of the desire among employees for access to green spaces. "It's needed to attract a skilled work force," said Florence Williams, author of *The Nature Fix* "Young people are demanding high-quality outdoor experiences."

A park ranger leads a hike through the Kahuku unit of Hawai'i Volcanoes National Park. NPS PHOTO/JANICE WEI

The number of "forest schools" — which have long been a tradition in Scandinavia and where much of the learning takes place in natural settings in the outdoors — has mushroomed in the United States, up by 500 percent since 2012, according to Louv. Oregon recently passed a ballot measure to raise money for outdoor schools, and the state of Washington just became the first state to license outdoor preschools, where much of the play and learning occurs outside.

The organization Children and Nature Network, founded by Louv and others, advocates for more time in nature for children, tracks the research, and has a long list of abstracts that summarize studies on the subject on its website.

And The Trust for Public Lands (TPL) has just finished a seven-year project to map the parks of the U.S., with the aim of identifying places in need of parkland. "We've mapped 14,000 communities, 86 percent of the nation, and looked at who does and doesn't live within a 10-minute walk of a park," said Adrian Benepe, a senior vice president of TPL.

[3] Florence Williams, *The Nature Fix: Why Nature Makes Us Happier, Healthier, and More Creative.* (New York, NY: W.W. Norton & Company), 2017.

The organization has a Ten Minute Walk campaign to work with mayors across the U.S. to make sure all people have that kind of access.

An increasing number of healthcare providers are also embracing the back-to-nature paradigm. One organization, Park RX America, founded by Robert Zarr of Unity Healthcare in Washington, D.C., declares its mission "to decrease the burden of chronic disease, increase health and happiness, and foster environmental stewardship, by virtue of prescribing Nature during the routine delivery of healthcare by a diverse group of health care professionals." The organization has 10,000 parks in its "prescribing platform."

> One expert says he's concerned that the growing interest in more contact with nature relies too much on only experiencing it visually.

The global Association of Nature and Forest Therapy Guides shows clients how to use immersion in nature for healing. "The forest is the therapist," the group's slogan reads. "The guides open the door."

Studies show that the effects of nature may go deeper than providing a sense of well-being, helping to reduce crime and aggression. A 2015 study of 2,000 people in the United Kingdom found that more exposure to nature translated into more community cohesion and substantially lower crime rates.(4)

And while more vegetation is thought to encourage crime by providing security for criminals, another study found the opposite — vegetation abundance is associated with a reduction in assault, robbery, and burglary, although not theft. (5)

Still, many of these studies are correlational rather than causal. That means it's hard to show that natural landscapes cause these effects, though these things happen when

[4] Netta Weinstein, Andrew Balmford, Cody R. DeHaan, Valerie Gladwell, Richard B. Bradbury, Tatsuya Amano, Seeing Community for the Trees: The Links among Contact with Natural Environments, Community Cohesion, and Crime, *BioScience*, Volume 65, Issue 12, 01 December 2015, Pages 1141–1153, https://doi.org/10.1093/biosci/biv151

[5] Mark K. Wolfe, Jeremy Mennis. "Does vegetation encourage or suppress urban crime? Evidence from Philadelphia, PA," *Landscape and Urban Planning*, Volume 108, Issues 2-4, November – December 2012, Pages 112 -122.

The view from atop Swiftcurrent Mountain in Montana. BRENDAN T LYNCH/ FLICKR

people are in a natural environment.

Sara L. Warber, professor of family medicine at the University of Michigan, noted that there are no "randomized, controlled studies" on the effects of nature on human health. Nonetheless, she said, there are epidemiological studies and measurements of before and after exposure to nature, and the results from this research are robust.

Peter H. Kahn, a professor of psychology at the University of Washington who has worked on these issues for decades, is encouraged by the new focus on the subject but concerned that the growing interest in more contact with nature relies too much on only experiencing it visually. "That's important, but an impoverished view of what it means to interact with the natural world," he said. "We need to deepen the forms of interaction with nature and make it more immersive."

What are the active ingredients in a dose of nature? Pioneers in this work, Rachel and Stephen Kaplan, who began studying the subject in the 1970s, devised Attention Restoration Theory, which holds that paying attention in bustling cities, at work, or in other stressful environments requires a good deal of effortful attention. In a natural environment, however, the Kaplans found that people paid attention more broadly and in a less effortful way, which leads to far more relaxed body and mind.

Japanese researchers have studied "forest bathing" — a poetic name for walking in the woods. They suspect aerosols from the forests, inhaled during a walk, are behind elevated levels of Natural Killer or NK cells in the immune system, which fight tumors and infections. A subsequent study, in which essential oils from cedars were emitted in a hotel room where people slept, also caused a significant spike in NK cells.

However this growing field might be defined, it is gaining momentum. In a recent paper, 26 authors laid out a framework to create a formal role for the positive impacts nature has on mental health and to formulate a model for conserving nature in cities and integrating it into planning for these health effects. (6)

"We have entered the urban century, with two-thirds of humanity projected to be living in cities by 2050," said Gretchen Daily, director of the National Capital Project at Stanford University and a senior author of a recent paper arguing that the cognitive and emotional benefits of nature should be factored into economic ecosystem service models. "There is an awakening underway today to many of the values of nature and the risks and costs of its loss. This new work can help inform investments in livability and sustainability of the world's cities." (7)

"There is an awakening underway today to many of the values of nature and the risks and costs of its loss," says one researcher.

While the research has grown leaps and bounds, Kahn and others argue in a recent review paper that research into the topic is still lacking in many ways, and they lay out a research agenda they say would help formalize the role of nature in public health policy. (8)

Understanding nature's therapeutic effects may be arriving at a propitious moment. Some studies have found that anxiety over climate change is a growing phenomenon. Ironically, one of the best antidotes for that might be a dose of green space.

"If I am feeling depressed and anxious and worried about the environment," Warber said, "then one of the best things I can do is go out in nature."

[6] Gregory N. Bratman, Christopher B. Anderson, Marc G. Berman, et al. "Nature and mental health: An ecosystem service perspective," *Science Advances*. 24 Jul 2019, Vol. 5, no.7. https://advances.sciencemag.org/content/5/7/eaax0903

[7] Ibid

[8] Howard Frumkin, Gregory N. Bratman, Sara Jo Breslow, et al. "Nature Contact and Human Health: A Research Agenda," *Environ Health Perspect*. 2017 Jul 31;125(7):075001. doi: 10.1289/EHP1663. PMID: 28796634; PMCID: PMC5744722.

INTRO: SILENCE AND LISTENING

Gerard Leonard

ABOUT THE IMPORTANCE AND THE NATURE OF THE SILENCE GAME

Dr. Maria Montessori

MEDITATION ON SILENCE

Mario M. Montessori

THE SILENCE LESSON

A.M. Joosten

THE NATURE AND THEORY OF SILENCE ACTIVITIES IN THE CHILDREN'S HOUSE

Mary Black Verschuur, Ph.D.

LECTURE 19: ANALYSING SOUND AND APPRECIATION OF SILENCE

Dr. Maria Montessori

Silence and Listening

Gerard Leonard

Albert Joosten in his article on "The Silence Game" writes: "Only the child could reveal appreciation and "love" for silence as a characteristic of normal man." (*AMI Communications* 1967/4, 27). In writing this Mr. Joosten is both referencing the reality of the absence of silence in our everyday world and also revealing to us that it was Maria Montessori and others' lived experiences with young children that showed how children love to create silence and then listen for the subtle sounds of their immediate world.

Researchers working with children and adolescents from age 4 to 15 have discovered, when they asked them about the kinds of living/learning spaces they would wish for, that common themes across the ages were the greens of plants and trees, the blues of sea and sky, natural colors, and natural light; to interact in a close knowable landscape, and solitude, quiet places to be.

"Even as contemporary life pushes silence to the corners, a longing for it persists, as does faith that it offers something the noise of the world cannot provide." (Brox, 245). Maria Montessori saw as she observed the children walking on the line and playing the silence game that not only were they practicing and refining their economy and control of movement, but that these activities, and most especially the experience of silence- "does not leave us as we were before", that "silence disposes the soul of the immobile being to something special." (Montessori, Maria, 2).

Mario M. Montessori in his beautiful essay "Meditation on Silence" speaks of the dignity and self-confidence the child experiences when he has learned to split his attention and control his movements when walking on the line and when inhibiting all movements in order to be silent. He speaks of "Blessed Silence". Mr. Montessori once told me the story he narrates here of this profound experience of Silence and of the compassion for human-

ity he felt as he meditated on a mountain side in India during World War II. He spoke of how this encounter with "Blessed Silence" had always remained with him over the years into his old age, and of how it helped him appreciate the gift that is the Montessori silence game. "A delicate perfume", he calls this precious secret of silence shown to us by the children.

The following collection of classic articles beautifully describe the way of the silence game and the joy of waiting and listening. They also emphatically remind us that silence lesson is NEVER to be used to impose discipline, to 'obtain' silence from a group of children. Margot Waltuch, an indefatigable promoter of the Silence game, articulates this in her recollection of a very special moment at La Maison des Enfants in the 1930s in Paris.

> "There is quite a contrast between enforced silence and silence "from within" the children. Children sometimes want silence - they play statues or hide-and-seek or simply sit opposite each other to see who can last the longest without moving or even smiling. They love silence and immobility and practice it spontaneously. One day we had a special visitor on the lawn during our silence - it was Mahatma Gandhi. He was visiting Paris and expressed an interest in seeing a well reputed Montessori school. It was a warm and sunny day, allowing us to sit outside around him in a circle. The silence gives us a moment to discover the unknown in ourselves."

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About The Importance And The Nature Of The Silence Game

Dr. Maria Montessori

To eliminate sounds or noise – that is to have silence – only one thing is necessary: that there be no movement. This is a condition. But certainly silence is a very difficult thing, indeed impossible, because to obtain it there must be an absolute lack of movement. There can be grades of it, however, just as there can be grades of sounds and noises.

By silence, the finality at which we can aim as an immediate interest of research, is generally meant the maximum silence which can be obtained; for example, in a class or at a gathering (such as ours) where there are many people, they, by being still, little by little provoke a silence which becomes more deep the more the people persuade themselves that they must not move and control all their movements. In other words, they repress them, a thing that generally many people, children for instance, supposedly cannot do. But we know that small children are able to inhibit all their movements if they themselves have already had an education of the movements such as ours in which they have received indications in controlling movements, a process which prepares them for this last step: complete inhibition.

As teachers know, the most difficult thing is not to move. It is more difficult not to move than to move well. For this reason, the children must have done long exercises in moving well and in controlling their motions before being able to succeed in this sort of triumph of the will which inhibits every voluntary movement. Then all the noises of children or of people gathered together exist no longer; this accomplished, at the first moment there seems to be silence. But, little by little, we begin to realize that there is not, because – once the loud noises are hushed – the soft noises are revealed and if we abolished these, there would be others finer. So there is a sort of acuteness which follow the finer grades of silence. For there are distant noises and near ones; we can abolish those near but not those

far away. Prevalent in cities above all are loud noises, but in the country, there are soft and far away ones, a bird flying, etc. Among us, for instance, the ticking of a clock, which we do not usually perceive, would become perceptible little by little if we were silent. Flying insects which we do not hear generally, might be heard if we were silent.

So then there is an interest to discover those things which generally we do not perceive in ordinary life and it would almost seem as if we put the equivalent of a microscope to our ears because the microscope makes the eye see things imperceptible to the naked eye, and it is as if we put on the ear a sort of "lens of silence" which makes it easy to discover things to which otherwise we might not pay any attention. Children are so sensitive to this that many times I have found children of two years trying to find more occult noises by being silent.

Today silence has become a public rite, a manifestation of remembrance or a salute to those gone by. This experience can be done well or badly. For us it is possible to have it done well, because we were able to place this fact of inhibition in the will of small children before it became used in public demonstration.

The child loves silence in itself; however, there is something to add: that silence disposes the soul of the immobile being to something special, in other words silence does not leave us as we were before. This something special is certainly not an acquisition of culture because complete inhibition is an external state, but it acts upon an internal state. All thinkers and mystics are said to have sought silence because it predisposes to the interior attitude of mediation. As a beautiful environment with light, colour, perfume can have an influence on poetical inspiration, so silence gives us above all the surprise of possessing within us something which we did not know we had, spirituality, and the little child tends to feel this interior life, because he is by excellence the interior being. No doubt the child who has experienced it is no longer the same child, but a soul expecting something.

The satisfaction we give to this state of the soul is to call by name the child who is waiting and he comes to us; we call them all and they all come to us one by one; they

move, they get up and come, seeking to make the least possible noise. The child who waits and hears himself called has accomplished a kind of cycle of satisfaction; he comes walking quietly on tip-toe as not to make a noise. So the teacher must call by name all the children who are in silence, one after the other without forgetting anyone, because we cannot make a soul remain anxious to be called and then not call it. The one who is last and has waited the longest must be truly satisfied. Those teachers are cruel who do this exercise as a sort of luxury for they lead all the children to put all their efforts and energies to this exercise and then leave them disappointed; as if the teacher did not believe that in that soul there is a need to which it is our duty to correspond. Therefore we must call all the children who are waiting.

The voice of the teacher must not disturb, it must be a voice without sound, a voice which is difficult to hear and one must be in silence to hear it. The teacher must do exercises to pronounce the names of the children with a soft voice, pitching it in the most indistinct manner possible. Often people visit one of our schools and see this silence exercise, they believe that the teacher is silent and ask themselves for what reason certain children all of a sudden get up and go to the teacher and why only those children and not others. This is because the visitors hear nothing but the child who is in suspense hears the voice which calls his name, even from afar, thus for instance stretching out the syllables the children hear as if it were a voice from far away which calls them.

It is not the movement of the lips which reveals to the child his name pronounced without sound; indeed, the teacher should place herself behind the children or outside the room, in such a way as not to be seen, because it is the voice that calls that must be heard by that child; the name must not be read upon the lips. With the exercise we must put in evidence, emphasize this characteristic and we must not come to falsify it. For this, I say, the teacher must put herself behind, far away.

Often the children, to abandon themselves to this delight, close their eyes, because they are accustomed to blindfold their eyes in order to perceive better the sensations: this

closing of the eyes sharpens the hearing and we see children closing the eyes to hear purely the voice.

Thus, this exercise and others bring little by little a discipline composed of calmness and interior beatitude.

This lecture was given by Dr. Montessori at one of her courses in 1930.

Meditation on Silence

Mario M. Montessori

Self-control is (or at least was) considered an admirable quality to possess. Even today, self-control – as mastery over self – is one of the ingredients of concentration, of meditation, of objectivity, of detachment. As regard to person, it leads to clear mindedness and to serenity. Towards others, it leads to cooperation and tolerance. Self-control is included in all that I mentioned, but this includes only a few elements because self-control has a vastness few consider. It starts from the earthy and it reaches the mystic, by expanding successive spheres: the physical, the mental and the spiritual. Each is separate as successive steps of a ladder and each can be separately attained through will, effort and repetition. However, once self-control has been acquired at any level, the exercise of will, of effort and repetition is no longer necessary. Self-control has become so much part of one as if it had been innate.

Self-control is an individual development, it cannot be imposed. Commands, impositions, or silent disapproval may lead to participation in social collaboration. But then the persons involved are mastered, their will has been fettered. The achievement of real self-control requires the exercise of conscious will over oneself and over one's actions until, by successive steps, one has arrived to full conscious mastery over one's self. The employment of conscious will may derive from natural urges – and then is the joyful fulfillment of satisfying hunger, or from determination of fighting hunger and then it becomes a stern discipline. Yet the result is the same. When mastery over self has been reached, one has arrived at the first step towards "incarnated" self-control. The difference between the first step of, and incarnated self-control can be compared to one who submits himself to the stages of learning to ride a bicycle (first step) and having become a bicycle champion (incarnated). The conscious mastery over self which, in very young children, was nearly parallel to that possessed by well mannered adults, was one of the surprising revelations given by the children in the first Casa dei Bambini. No adult had asked for it, no one had

expected it. Investigating later what might have contributed to this spontaneous acquisition, certain features stood out.

Freedom had replaced the discipline of orthodox schools; control of error embodied in educational aids, had replaced the depressing and discouraging Voice of one who always knows better, who is always right, whereas you are always wrong. The basical elements were these two: first freedom from the Voice, second the control of error. The control of error had confronted the children with themselves. They sought their own error and had the satisfaction of finding the solution. This gave them clarity of knowledge and added self-confidence. Other elements were the techniques of showing such simple things as carrying a chair, as how to put down things without making a noise, as how to wash a table without splashing the water on the floor or wetting himself, etc. These, given at a period of history when children were always told "don't" (and still they did); when their incapacity was revealed by "disasters", when they were indulging secretly in them, were a liberation. The fact that they were given in attractive presentations and the fact that the children were given the freedom to engage in them, aroused the children's enthusiasm. Because the technique was the previously unrevealed secret, which made the difference between being punished and being glorified. Glorification is more than praise. But as Dr. Montessori illustrates, what the children sought was not a prize, but the human dignity of one who discovers his own capabilities, who is self-reliant and self-sufficient. The technique of each of these attractive activities without their realizing it, required the children's self-discipline. The children's minds had to guide their bodies consciously, to control every movement. For any mistake would have marred the joy of the desired result. This implied "concentration" on the task and "resisting impulses" not connected with it.

As the ability to guide their movement, to control them, to inhibit the unwanted ones became more efficient, the children accepted with eagerness any further points of exactness which would lead them to greater perfection. They were not the cruel imposition of boring details, as they were considered by some adults. In the children's natural trend towards perfecting themselves, they were as added beacons to one who is groping forward in the darkness. So gradually the light of consciousness encouraged the will to resist the

previous chaotic impulses which had been the mind's reaction when thwarted along the path of personality-building. The ever growing clarity gave the mind the possibility to take hold, to come at last to its natural role, of acquiring complete mastery over the body and so to become the leading element in all activities, mental as well as physical. Self-confidence grew as the ability of the mind increased from being able to center on one goal, to the ability of splitting the attention, so that it could control the body to achieve simultaneous goals, as in the exercise of walking on the line. Finally the mind, exercising will, was able to control and inhibit every last movement as in the silence lesson.

Described as it is, the progress may appear to be the result of a logical, prearranged plan. If the result came as a surprise to Dr. Montessori, it means that it was just not so. Her surprise implies that she had not noticed the steps. It also implies that these must have been parallel and not subsequent developments. What they were is enclosed in the secret of childhood which even now is far from being revealed. But from the experiences I have had in many parts of the world and among children of different races and at different periods of my life, I have witnessed that if children have had the possibility of developing during the early sensitive periods the sort of self-mastery I have described, the silence lesson has a peculiar fascination for them. I feel that this fascination may explain the need mystics feel for silence which is not explained by the mere ability of physical self-control. It implies something else, something much vaster. I am not a mystic by any means, but during the war when Dr. Montessori and I were interned in India I had a curious experience. She was asleep; I used to go out in the surrounding forest to be alone in the midst of nature which I love and in the silence of the night which I also love. I was full of resentments and worries. Resentment against Dr. Montessori for being restricted in her freedom, worries about my children, defenseless among the bombs falling on Europe. My preferred spot was a rock on top of a cliff. The murmur of the brook in the valley below, was audible only at the moments when the breeze was stronger. On the other side of the valley the darker outline of trees stood motionless against the dark sky. All was silent, only the bright twinkle of the stars seemed to speak with inaudible voice. Looking at them, I was immersed in my gloomy thoughts. So I sat. The sharp unevenness of the rock bothered me and in my thoughts I accused God as I looked at the stars. I had done that for months. The

night I surrendered. I said: "God, Thy will be done". And thinking about the mystery of God, I gazed on the silhouette of the trees, on lighter sky and on the twinkling stars which seemed to try to convey a message. Gradually the awareness of what was earthly began to vanish: the hardness of the rock, the breath of the breeze, the murmur of the brook…..As the body ceased to transmit the earthly images, one by one the veils of consciousness were shed. One by one memories, sorrows, troubles and plans about the morrow fell way from my mind, veil after veil. And then nothing around me existed, nothing in me existed, I was free in the Silence of my unconscious.

The Silences, the blessed Silence when nature ceased to impose on me with the soft movement of the water in the brook, with the movement of the breeze that brushed my cheeks, with the movement of the leaves that whispered.

Silence, blessed Silence of the body which, for a while ceased to transmit the discomfort of the rock, the dampness, the shivering heat.

Silence, blessed Silence of the mind, which no longer called with the yesterday, the today or the tomorrow; with plans to save the world.

Silence, blessed Silence, when self became the platform of flight to non-self.

Peace, intense peace, immense peace. Suddenly I seemed to vanish to become as tenuous as a vapour. Darkness disappeared.

Light, brilliant light now prevailed. I was there and not there. I seemed to have melted into the Universe.

Yet I was there for I seemed to see the whole humanity below me. But I was not there. Compassion was there for that humanity which was suffering, struggling, weeping, seeking to get possession, futility of futile values, as a weeping child seeking in vain to reach

a ball which has rolled beneath a heavy cupboard. I was not there; compassion was there and a great tenderness.

It was a unique experience, the memory of it has never left me. But I now wonder at what I saw sometimes after a silence lesson in certain children as they walked back to their place: an expression of peace; a light of tolerance, of goodness in their eyes; an inner smile on their composed faces. Perhaps they too, the children had met the silence, the inner silence, the real silence. Since that experience on a mountain of India, I realized more fully that the silence lesson in one of the most precious items of the Montessori approach. It is a delicate perfume.

Ways to prepare the children for it should ever be present in the minds of those who guide the children in the fulfilment of their potentialities.

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The Silence Lesson

A.M. Joosten

The "Silence lesson" as a characteristic "activity" in Montessori schools can never be understood or applied unless it be clearly realized that it is the result of experiences, the answer to a vital need revealed by the children themselves, not a pre-conceived educational device.

Generally silence, whether in the home or in the school, is one of the things which are not "taught" but imposed. Usually by making more noise, than that made by those ones wants to keep quiet and thus creating an atmosphere of fear and emotional tension which is the very opposite of the state of relaxation required to obtain real silence.

Silence in itself and for itself is generally not appreciated in the usual environment of children and adults. In social gatherings it is supposed to be "embarrassing". Only the child could reveal appreciation and "love" for silence as a characteristic of normal man.

The nature of silence:

Silence is the result of the suppression of movement (the cause of all sound). It can therefore, be obtained only by inhibiting movement and belongs to the development of voluntary control movement, marking a high degree of mastery, because inhibition is more difficult than control of activity. It is achieved by the extension of self-imposed control over movement and as such it is also part of the development of the will: an individual achievement. It is exercised however, by the community as a whole through cooperative effort of all the members of the community. Only this cooperation can achieve real silence. This makes it a factor of social education.

[1] Dr. Maria Montessori, The Discovery of the Child, pp. 165-171 and The Secret of Childhood, pp. 166-169.

The silence lesson, its nature and foundations:

The silence lesson is NEVER to be used by the teacher as a disciplinary imposition, i.e., the silence lesson may never be given in order to reduce the community to silence when it is rowdy. If the activities of the children should be accompanied by excessive noise, its reason should be discovered and dealt with (usually lack of real interest and concentration). The silence lesson presupposed a high capacity of concentration and inner discipline and can therefore never serve as a means to remedy the lack of them. Silence is a point of arrival, not a point of departure. In the history of the revelations of the children in the first "Casa dei Bambini", the silence lesson came much later than other fundamental and guiding revelations.

Its foundations are the development of:

1. coordination of movement in action (exercises of Practical Life);
2. consciousness regarding sound and noise and "minimal" stimuli (sensorial exercises);
3. mastery of the will (free choice and self-determination);
4. social sense (collective activities, life in a community with freedom for the individual, accompanied and limited by regard for others and for the environment-social cohesion);
5. normalization, i.e. integration of the personality and inner accessibility to the environment as a means to realize the inner urges of development.

The silence lesson presupposes the development of each of these features individually and represents their synthesis on a higher level revealed by the child as a symptom and an "index" of a level reached.

Technical points:

When the children are normalized and have built up a life of concentrated, purposeful activity – usually after several weeks – the silence lesson can be initiated and has to be prepared in various stages. These constructive lessons require the spontaneous consent of

all who are taking part in it. Those who should not be willing to do so, leave the environment and continue their activity in some other place of their own choice. The teacher chooses the moment to introduce this collective activity "psychologically", so that the individual activities of the majority be next interrupted.

In short collective exercises, consciousness is directed towards the various movable parts of the body which are subject to the will and control extended over them: hands, feet, arms, legs, head, mouth, eyes, trunk, even breathing. Each time one part is brought under control in addition to those already previously dealt with. The effort is to keep a successively increasing number of these parts perfectly still for a short while. The environment can stimulate and assist this effort, e.g. by drawing the curtains or lowering the blinds. One day when ALL keep TOTALLY immobile, silence is the surprising result and reward and is enjoyed as a novel, impressive experience. It then becomes an end for its own sake. We propose or the children ask to "make silence".

If there are children who know how to read, the word "silence" can then be written on the blackboard, or a card with "silence" written on it can be placed in a prominent position by the teacher or by one of the children. As one or more of the children catch sight of it, they keep still without further verbal invitation. This is noticed by others, also those who do not yet read (although, soon they learn to recognize the word or the card for what it signifies) and silence descends on the community. (Here again it is to be noted that the word "silence" is never exposed as an admonishment that the individual should work without making noise, but as an invitation to a particular collective activity).

At a later stage the silence can be utilized for an acoustic exercise and then becomes part of sensorial training.

Results:

Among the results of the silence lesson, there is interest for usually imperceptible sounds (ticking of the clock, sounds of birds and insects, a leaking tap or drizzling rain, etc.) and their identification. An increases sensitivity for minimal sounds as well as a

habit-effort to minimize sounds and noises as one performs the activities of ordinary life, marks a further step in development. This, in its turn leads to an increase of discipline. This refined discipline in its turn becomes a vital need. The children also show loftier sentiments by spontaneously refusing any material reward for this effort (sweets, etc.). Silence itself is the only reward. These conquests of development can then be used at will whenever required (on entering a sacred environment like the church, during ceremonies and performances, etc.)

See also A.M. Joosten "The Silence Lesson" in AMI Communications 4:1967, pp. 27-29.

The Nature and Theory of Silence Activities in the Children's House

Mary Black Verschuur Ph.D.

One of the "secrets of childhood" discovered by Maria Montessori was a phenomenon she came upon quite unexpectedly one day when she entered the Children's House with a sleeping baby in her arms. As the children gathered around to see the infant, Montessori drew their attention to the baby's stillness and jokingly asked them if they could imitate that relaxed motionlessness.[1] The children's positive response to this challenge and subsequent requests from them to her to repeat the experience led Montessori to discover a need for silence amongst small children. Contrary to the popular belief which equates children with noise, Montessori discovered that self-directed silence is both rewarding and enjoyable to young children.

Before embarking on this discussion of the origins and nature of the Silence Activities[2] in the Children's House, I would like to emphasize that the Montessori concept of silence is a state of calmness and stillness willed by the individual and arrived at through self-direction and out of spontaneous interest. It is not the kind of silence which is imposed by an outside authority and maintained through coercion and reprimand.

Maria Montessori recognized the power of silence and its concurrent reward when she first experienced it in the Children's House, however, she was neither the first nor the last person to realize the human need for silence and the enlightenment it offers to those who seek it out. The word silence has many meanings and many interpretations. Most generally we equate silence with quiet. Quiet however, is the most mundane of synonyms for a condition of life which has the power of silence. Silence is more than mere quiet.

[1] Maria Montessori, The Montessori Method (New York, 1964) 212-214. See also The Secret of Childhood (Notre Dame, Indiana, 1966) 150-153. Montessori herself did not suggest that she challenged the children as a joke, but Mr. Joosten claims that she told him this once when they were discussing the subject. For Joosten citations, see below.

[2] The term Silence Activities is the most current one used to describe what Montessori called the Silence Lessons which was later altered to the Silence Game. Mr. Joosten explains Montessori's only real models for anything like what she was doing in her time were schools, hence the use of traditional vocabulary and the appellation Silence "Lesson."

Silence on the Lawn (Waltuch Collection)

Silence is a state of being which offers a rich reward to those who can achieve it even for short periods of time.

Culturally too, silence has many interpretations. Within our society silence can be construed as inferring compliance or disapproval. There is a respectful silence in which we

[3] Charles Eastman The Soul of an Indian (Cambridge, 1911) 88.

listen to the opinions of others and there is the silence of withdrawal when we deliberately ignore the voices of others in our environment. We use silence in all sorts of ways to communicate our feelings and our desires to others. Our culture does not normally perceive silences as a genuine means of inner development, nor does it find any relationship between the child and silence. Historically people have always believed that children like and make noise and they naturally resist silence.

There are traditions of silence, however, which are far older and far more profound than those found in modern western culture. The young American Indian child is taught by his/her mother from a very early age to be still and listen to all the sounds in nature. The Native American "believes profoundly in silence – the sign of perfect equilibrium. Silence is the absolute pose or balance of body, mind, and spirit."[3] Furthermore, in the Indian way of thinking, silence adds dignity to the spoken word. A few well-chosen words spoken at the right moment can often say more than long speeches. The words carry greater weight when there is silence in which to ponder their message.

The religions and philosophies of the east are replete with traditions of silence which extend beyond the practical and into the realm of metaphysics. The Sanskrit word for silence signifies quiet, peace, and rest. Entry into a peaceful state of silence restores a sense of freedom and security to those who choose to do so (4). Hindu meditative techniques practical guides to self-awareness and to enlarging the horizons of knowledge. The silent aestheticism of the Buddhist traditions offers yet another kind of silence in which through stillness of mind and body the potential of entry into a higher level of consciousness or Nirvana becomes a possibility.

Amongst all of these literal and interpretive definitions of silence, where, you may well ask, did Maria Montessori's concept of silence develop. Silence activities form an in-

[4] S.N Ganguly. "Culture, Communication and Silence: in Philosophy and Phenomenological Research 29:2 (1968) 195.
[5] Montessori, The Montessori Method 212-214
[6] Maria Montessori, Spontaneous Activity in Education (New York, 1965) 170-171
A.M. Joosten Lectures on Silence Activities delivered at the A.M.I. Training program in St. Paul, Minnesota in May 1977. (Hereafter Joosten
[7] "Tape 5/77"). The tapes of the lectures were kindly lent to the author by permission of Chulie Fernando with permission to use some of the material contained therein. See also A.M. Joosten "The Silence Lesson" in AMI Communication 4(1967) 27-29.
[8] Mario M. Montessori "Meditation in Silence" in AMI Communication 4:(1967)20-23. C.A. Claremont "how to Start the Silence Game with Quite New Children" Ibid. 23-26. Tapati Gupta in Around the Child X: (1975) 81-83.

tegral part of the daily life in most Children's Houses, yet when we look at the literature of Montessori to discover the background of the silence activities, we find almost nothing written on the subject.

Montessori described the origin of the Silence Lesson in her book *The Montessori Method*[5] to which I refer readers unfamiliar with the circumstances which led her to discover the children's joy in actually making silence. Thereafter she wrote very little else (which has been published) either on silence itself or on the development of silence activities in the Children's House.

Montessori did, however, write extensively on the will and the development of will in young children. Later interpreters of her work have used these discourses on the will as guideposts by which to structure silence activities for the Children's House. Montessori described will as "the intelligent direction of Movement."[6] This rather broad statement concerning will seems applicable as a suitable definition of self-directed silence.

To date, the most articulate interpreter of the implementation of the silence activities in the Montessori environment has been the late A.M. Joosten, and it to the work of Mr. Joosten that I am indebted for much of the resource material in the preparation of this article.[7]

Brief articles by Mario Montessori, Claude Claremont, and Tapati Gupta[8] provide the only other literature on the subject of silence in the Montessori context.

Silence in the Children's House is neither a "desirable" noise level (hum) nor an imposed hush ("be quiet"). A method of education based on discovery and exploration through social interaction can hardly function in an atmosphere of imposed silence. The natural process of active discovery implies noise, movement and discussion. Silence in the Children's House, therefore, takes on a special significant and becomes a special activity requiring the collective co-operation of all the members of the group. Silence Activities are

[9] Joosten, "Tape 5/77"
[10] Ibid4

a very particular exercises, requiring all the preparation devoted to any of the activities introduced into the prepared environment.

Silence and activity seem to contradict one another, for silence implies stillness, while activity implies movement and hence noise which breaks silence. Yet here, as in so many instances, if we think seriously about creating silence, we quickly realize that to make a silence demands the most active participation of each individual taking part in the activity for each must make a real effort to still his/her movements in order to make a perfect silence. In other words, the child must become active in directing his/her stillness. I use the word stillness not in terms of a statuesque pose, for it should not be a stillness induced by tension. Rather it should be a stillness of relaxation which comes about through the body's being in equilibrium. To achieve this state of calm and balance requires great attention and will power, and it is the act of silencing or stilling mind and body that begins the activity of silence.

In order to understand the Montessori concept of silence, we must examine the nature of silence in the Montessori environment. In its most simple form, the collective activity known as the Silence Game is "an effort to suspend all controllable movements and the absence of ordinary noises consequent thereon."[9] The effort is made by each individual in the collective to suspend and control his/her movements. The silence cannot be created at the direction of some outside authority. The choice to become silent must come from within each individual participant if the silence is to be real.

The type of self-mastery required for such an effort is not achievable without practice and preparation on the part of the individual. This begins with the very little ones in the Practical Life exercises. Practical Life helps children to master their movements and to direct them in a controlled manner. The exercises awaken in each child a consciousness of self, of one's body, and of own's own innate ability to master movement. All this leads to an awareness of the ability to direct the self on some predetermined course.

Balance and equilibrium are also important to stillness. An object can only become still when it is in equilibrium. In preparation for this element of the silence activity, it is necessary that the children have been introduced to and have mastered the basic elements of Walking on the Line. In addition to making the children more aware of balance and equilibrium within their own bodies and giving them the opportunity to create that balance within themselves, the Line activities also prepare the children for the collective experience. Mr. Joosten emphatically stated that the silence must and can only be a collective activity. All the children in the group must be willing to participate and be prepared to participate, otherwise the activity is doomed to failure.[10] The difference between the collective experience of the line and that of silence is that children may watch others walking on the line and may participate by watching, however when it comes to the silence there can be no watchers, silence *requires* the participation of everyone in the collective.

In order to begin a silence activity the children who are either unwilling, uninterested, or unprepared must have the opportunity to go elsewhere to continue their own work, for they cannot be coerced into participating nor can they continue to do what they are doing where they are. These infractions, although perhaps seeming trivial, will distort the silence and will make the object of the activity unachievable. At times this option may not be a very practical one, but the only choice is to remove those who are not interested, not as a punishment, but merely to prepare the environment. If this cannot be done, then the only real alternative is not to initiate a silence activity at that time.

Like most of the activities in the Children's House, silence is not achieved at the first presentation. It is a progressive activity, built up over a period of time. Eventually practice should lead each child to a consciousness of the command he/she has over the control of his/her own body. When the conscious awareness is arrived at and the child can will the suspension of all his/ her controllable movements, then that child is ready to experience silence. In the stillness and equilibrium thus achieved, the whole person, mind and body, is opened up to otherwise undiscovered realities in the environment. At first and most basically, noises which are drowned out by the hum of everyday activity will become apparent. Noises which though constant are ever present in our environment, like the birds

singing, the wind rustling the trees, rain falling, or the hum of the filter pump on the fish tank, become magnified in silence. At a later stage, and with practice and repetition, one's sensitivity to the environment should become heightened. The ability to still both mind and body frees the individual to attend to his/her own inner voice, to recollect and to be at peace. In this phase, the opportunity for experience beyond consciousness becomes possible. In Mr. Joosten's own words, "this is a tremendous experience for children."[11]
The most important thing about the silence in the Children's House, and probably the most misunderstood, is that the silence must come from the voluntary efforts of each individual in the group. Silence which is imposed is not inner silence. When silence is imposed the efforts of those upon whom it is imposed are directed towards obedience and achievement. When the individual chooses silence him/herself, then that person is in command of self and can direct his/her movements. When the children in the Children's house realize that they have this ability, then it can be channeled into more lengthy activities involving silence, but the child must come to the realization of self-mastery first and foremost. Like all of the other activities in the Children's House, the Silence Activity, although done collectively, is an individual activity.

There are two very important discoveries which should emerge from successful involvement in Silence Activities. In the first place, by becoming aware of the constant noise in the environment, the children should come to the realization that there is no such thing as absolute silence, for no matter how still they become, they cannot stop the birds singing outside or the cars hurtling by below the window. This should lead to a more complex but essential discovery that a person has no control over anyone or anything except him/herself. This requires a subtle understanding, particularly in a society where outside authority, rewards and punishments, laws and regulations, mislead the individual into thinking someone else is in control and will "make" things happen.

Most people look upon silence as a disciplinary measure, and accordingly Dr. Montessori was asked more than once to explain how she could make the children silent and yet

[11] Ibid
[12] Ibid

claim freedom. The age-old misconceptions of freedom and discipline surfaced for Montessori just as they do today. Montessori discovered through her observation that children do not resist silence, but rather that they need and want it. When she took the baby into the classroom for the first time, she had no preconceived notion of how the children were going to react. She asked the children to imitate the baby's stillness almost as a joke.[12] Even having observed the interest of the children she did not recognize the interest as a need. It was when the children themselves asked her to repeat the experience over and over again that she recognized the possibility that the children enjoyed silence and wanted it to be a part of their routine. They asked for her help to create the relative silence again, and it was in this request that she discovered the need which led to the regular inclusion of silence "lessons" in the Children's House. She also observed that in order to obtain this kind of silence and its concurrent reward, the silence had to be arrived at by voluntary cooperation of all the participants and could not result from disciplinary commands.

Following upon her initial discovery, Montessori experimented with rewards for the Silence Activity which involved calling each child in the group out of the room, one at a time, but she did not dwell on the philosophy of silence, at least not in her published works. Undoubtedly her seven years of exile in India must have afforded her the opportunity to observe the tradition of silence inherent in Eastern civilization. Furthermore, since she was interned in the compound of the Theosophical Society at Adyar, Madras, for at least a part of that time, those with whom she was most likely to have had social contact there surely would have been Theosophists. Theosophy incorporates a strong belief in Buddhism and its attendant practices one of which is stilling both mind and body through quiescence and passivity.

If Montessori explored the theme of silence with the Theosophists, her published works on the subject fail to indicate any influence of India. However, we must remember that Montessori's experience with the baby in the Children's House had happened in the very early days in Rome. In India Montessori's chief concern was training teachers, and much of the theoretical application of her method was left to her early students, amongst whom were Claude Claremont and A.M. Joosten. As a young man Joosten, a Dutchman,

followed Dr. Montessori to India and eventually spent most of his life there. Mr. Joosten has been largely responsible for defining the nature of silence in the Montessori environment, and his interpretation of silence is replete with the cultural influence of the East.

He taught, for example, that silence reveals itself offering an opportunity to perceive the unperceived. Through silence our consciousness is expanded and we have the opportunity to reach out towards things which are normally beyond our reach, widening our horizons and allowing new things to appear. He emphasized that it is not enough to sit and wait for something to crop up over the horizon, but rather we must become actively involved in the process of opening ourselves up to new perspectives by bringing ourselves to a state of equilibrium which thus allows consciousness to expand by it simply being open. The process of opening up is easily achievable for children who, unlike adults, do not try to understand. Children simply act and attend to the silence and in attending are open. One's whole being ought to become enveloped in the silence.[13]

In order to achieve this kind of silence the activity must be initiated when the adults and the children in the environment are at peace. It should be begun at normal times and not when there is any chaos or restlessness present. If the goal is for the participants to find inner peace, then the body must be in harmony with the mind, for it is only in equilibrium that the security and freedom of silence can be fruitful.

All of the foregoing has dealt with the application of Silence Activities at the pre-primary level. Neither Maria Montessori not Mr. Joosten studied the need for silence amongst older children. Mr. Joosten challenged those to whom he lectured to observe and research the need for silence amongst other age groups. He particularly directed attention to the adolescent's plea to be "left alone," and suggested that this was perhaps an outward sign of a need for silence.

Having discussed the origin and nature of silence in the Children's House in some detail let us now turn to the more practical aspects of its implementation. First of all we

[13] Ibid

must attend to the preparation of the environment. There must be ample opportunity for the children to engage in Practical Life activities which help them towards coordination and purposeful movement. The children must also learn how to function as part of a collective. As was mentioned above, this is done through introduction to Walking on the Line. Silence, then, should not be introduced until the children consciously have certain command over the movement of their own bodies. Furthermore, in ensuring adequate preparation of the environment, individuals not yet ready for the demands of the silence should be shown to another place before the silence is started. In the early stages, silence will be initiated by the adult who must invite everyone in the room to participate. Those who refuse the invitation must be given the option to continue their work elsewhere. The choice of the child must be respected and followed without condemnation or disapproval, for the children cannot be compelled but must be freely experience control of self. Likewise, no one can watch a silence activity. To be present when the activity is in progress requires participation. And finally, but importantly, silence should only be initiated at normal times when the room and those in it are at peace.

Silence is never achieved in one sitting. Even if the environment is properly prepared, control can only be built gradually by a series of activities which begin simply by inviting the children to sit comfortably and to pay attention to the feet or other specific body part. The manner of presentation and the stages of development are introduced in most training programs and therefore, have not been included as part of this essay. However, for those seeking a concise description of the presentations, a short article by Tapati Gupta appeared in *Around the Child* several years ago,[14] and which outlines the presentation of Silence Activities in the Children's House.

Silence is frequently misunderstood by Montessorians and is often misused in Children's Houses. As was mentioned above, silence is a very special activity which should result in a rich reward for those who can bring it about. No Silence Activity should ever be used to calm or quiet a rowdy group of children. To use the silence in this manner is to misunderstand the function of the silence activity in its Montessori context.[15] Asking the children to "make a silence" when all that is required is that they calm down, is to misuse

the Silence and to ask for the impossible.[16] If the children are too rowdy, we must identify the cause of the rowdiness and then present to them ways in which they can move more quietly, talk more softly, or handle the apparatus more carefully.

Another common misconception about silence in the Montessori environment is that silence is the hallmark of a "good" Children's House. This is simply not true. Noise is a sign of normality. Certain noises belong to the normality of life and to eliminate these artificially is to create an environment which is abnormal. To whisper when we would ordinarily talk, to tiptoe when we would normally walk is to create a false atmosphere which is unreal. In the Children's House our aim is to prepare a real environment for the children and reality included the normal noises of everyday living. When a Silence Activity is initiated, it is done as a special exercise for the purpose of enjoying the atmosphere it produces.[17]

The overall aim of the Silence Activities is to help the child to become conscious of him/herself. The mastery over self which results from the effort and repetition directed towards the achievement of silence is, in the words of Mario Montessori,

one of the ingredients of concentration, of meditation, of objectivity, of detachment….[and]it leads to clearmindedness and to serenity….to cooperation and tolerance.[18]

Mr. Montessori stressed, however, that these lofty aims can only be sought by the individual exercise of will power. No amount of external coercion or imposition will ever result in an appreciation of silence. No inner peace can be achieved and no expansion of the horizons can occur without the exercise of conscious will over oneself. Although we may regret that Montessori herself left us so little of her thinking on silence, she wrote extensively on the development of the will. Exercise of the will is the most important contribution of each individual to the creation of silence in the collective. If the child is to be-

[14] Tapati Gupta "Silence Lesson" in Around the Child X☺1975) 81-83.
[15] A.M. Joosten "The Silence Lesson" in AMI Communications 4:(1967) 27. "Tape 5/77"
[16] There is a later Silence Activity which involves asking for a spontaneous silence, often instigated at the request of one child within the group, however this exercise cannot be done without adequate preparation and cannot be used to obtain quiet. See C.A. Claremont "How to Start the Silence Game with Quite New Children" in A/mi Communications 4:(1967) 25-26 for an interesting anecdote regarding the misuse of this activity.
[17] Joosten, "Tape 5/77".

come a volitional, acting, self-directed individual, no one on earth can make him/her achieve that objective. Each individual must construct him/herself and this can only be accomplished by the mysterious voice which speaks within the heart of the man in silence."[19] Our task as Montessorians is to heed the advice of Dr. Montessori who wrote I believe that the work of the education consists primarily in….the bringing of man into contact with the spirit which is within him and which should operate through him."[20] Surely one of the best ways to help bring about this contact is through precise presentation of the Silence Activities within a prepared environment.

Dr. Verschuur presents a definitive look at the origins and practice of the silence activities. This article was originally published in The NAMTA Journal, Volume 13:1, Fall/Winter 1987-88, pp. 101-111.

[18] Mario M. Montessori, p.20. Compare this with Charles Easton's description of the fruits of silence as recognized by Native Americans. "They are self-control, true courage, patience, dignity and reverence. Silence is the cornerstone of character." The Soul of an Indian" 90.
[19] Montessori Spontaneous Activity 193
[20] Ibid 194

The Montessori Approach to Music

We were very excited when the new book *The Montessori Approach to Music* was published with lectures from Maria Montessori along with the work of Anna Maccheroni. We asked the editor, Sarah Werner Andrews, to select a lecture from this book to add to this edition of the NAMTA Journal. It is almost impossible to take one area of Montessori philosophy and explore it without seeing its connections to other areas of human development; in this case silence, movement, and music. So we offer this gift from the book *The Montessori Approach to Music* to enrich our thinking about silence and to remind us all once again that our study of Montessori is always taking us back to the future.

Editor's Introduction

….As the Montessori approach to music is based upon the understanding that young children learn first through their experiences and senses, we at once engage the ear, the eye, the voice, the hand, the body, and the soul of the child – the whole of the child is actively involved in the entire musical experience.

….Just as with every other area of exploration and analysis in Montessori education, we do not give more to the mind than we give to the hand; so too the music method does not give to the mind what has not first been experienced through movement and the senses. The children refine their auditory perceptions with the sense materials for sound and pitch, explore equilibrium and movement through walking on the line, and create silence with the energy of restraint. The children first experience whole body movement to various rhythms, and hear a particular pattern sung or played before they see and analyse it. As with the early reading activities, when the children see the symbolic notation for music used to indicate a familiar melody or rhythm, it is like the joyful greeting of an old friend..."

- *Sarah Werner Andrews. Ed.*

Lecture 19: Analysing Sound and Appreciation of Silence

Dr. Maria Montessori

This lecture was originally presented in London, March 14, 1930. It is included in the book The Montessori Approach to Music *(The Montessori Series, Volume 23, Montessori – Pierson, 2020). We thank AMI and Montessori-Pierson for the permission to reprint the article here.*

All the material we use represents an order and classification of the images which the child spontaneously receives by observing in the environment. We can say that noises and sounds are recognised by even tiny children; family experiences tell us this. If someone followed small children in their first years, he would notice that they observe fine noises which come from afar, for example, the bark of a dog which they are accustomed to hearing, or the noise of a motor bicycle far away, or of a trumpet in the distance. There is no doubt that the children notice music; who does not know of the pleasure with which children follow musicians? I was impressed by the story that described how people were walking out of the city playing instruments, and found they were being followed by small children; these children were lost because they no longer knew where their homes were. So fascinated had they been by the music that they had wandered from home.

Even if music is not understood, it is certainly felt by the soul of the child.

As to distinguishing sounds and noises, there is no doubt that every child of school age knows this distinction and the accompanying words, because he has heard the adult say to him many times, 'Don't make a noise, don't make a noise,' and how many times has he heard, 'The bell is ringing; do you hear trumpet playing'? We can consider this material and its aim not as teaching, but as intervention; an intervention into a mental order which the child is beginning to make, and which needs help.

When we give the child the possibility to fix his attention in an orderly fashion upon some objects which also permit a motor exercise, we give such clearness to the mind of the child. This clearness gives a new fascination and a new impulse, a new mode of observation.

It might seem a simple lesson to say to the children, 'These audible sensations are noises, the others are sounds.' We might tell the children so, but it is better not to; it is better to give a material which needs no explanations but leads to the repetition of spontaneous exercises. This repetition not only refines the sense and draws the attention upon the fine variations of these stimuli, but also fixes knowledge, because we do not deal with random experiences, but with materials that can be handled as long as is necessary for the child.

We do not know how long it is necessary for the child to keep on working with these objects; only the child does; therefore, we must leave him free to use them as long as he wishes. Our help is not useless when the child exercises himself with the material for such a long time, repeating always the same exercises, but rather, this makes us marvel that we have given the child a help so great. Before, we had no idea such a beneficent intervention would aid the spontaneous efforts of the child explorer.

The field of the auditory sense is immense as it includes many branches which can be unfolded. The first step is to put in order the sensations acquired from the environment. In order to do this, we not only use a material which has determined characteristics, but also a psychological technique of use. Therefore, we help the child to observe in an orderly fashion, taking advantage of the natural psychological laws which give the possibility to distinguish well and clearly.

Here I could describe the characteristics of the sensorial material, but first I wish to address a misunderstanding regarding these materials. Rather than focusing on the object that makes the sound as it is found in the environment, as some psychologists advise, we insist that the child has already seen many such objects in his environment and that it is not necessary to put them in the school for him to be able to see them more frequently. Instead,

we give him something which he would not find by himself in the environment, i.e. the natural classifications.

Because it is necessary to give material which we do not commonly find in the environment, we must manufacture them. In the material I present today we want to emphasise the sound; it is not the noisy object which we want to make understood, but the sound. In our materials we present objects equal in all characteristics but one. In this case the only characteristic which differs is isolated, so while these objects have many qualities, we do not differentiate them all, but emphasise only one, the sound.

In order that these objects may be outwardly equal, we put inside different substances to produce different sounds, but which have the same weight. For example, a given quantity of sand or gravel, so that in raising them the weight is equal and only the sound differentiates them. The material inside the boxes must be chosen so as to give as much as possible a graded series of sound. To arouse the interest in this research, we give an immediate and determined aim, which serves as a guide; we give two identical series to permit the pairing of these boxes having the same sounds, and then these pairs are absolutely identical in all characteristics.

The control of error is the ear; after these objects are paired we pause and correct errors, which we did not realise.

To recognise identical sounds is the first step. Another step is to distinguish one grade from another, in such a way as to compose the series in decreasing or increasing order.

Proceeding in the same way we use the series of bells which serve for the study of pitch.

You may wonder why we chose bells, because they are not the most adapted instrument to give a pure sound. What we said about having to find pure colours, because the child could not find them in the environment, we can certainly repeat in this respect. And yet these materials are on their way to perfection, because they are not rigid.

The bells present various advantages to begin this education. The sound, though composed, is pleasing and attractive; the bell is commonly known and easy to use; it serves our purpose particularly well: all the objects are equal except for one quality. It permits the isolation of one quality, the pitch, because it is not difficult to manufacture bells that look the same and yet give different pitches.

How many playthings children have from which the musical scale can be composed! However, these playthings have, like here in this model reference series, different sizes according to the sound they reproduce. Different sounds depend on vibrations; the bells you see here do not only share that one diverse characteristic because we see here some larger and some smaller bells.[1] Consequently, the eye can guide, but this is only the model material for reference, the real research material is made of bells all equal, not larger or smaller. In reality, they differ in thickness, which is not visible; outwardly they are all equal and the eye cannot discover differences. It is only the produced sound which shows the difference in pitch.

We can begin to do what we did with the colours; we took a few contrasting colours, more distinguishable in their differences, and two of each. For instance, we can start with three or four pitches which we wish to pair – do, mi, sol. This pairing of a few contrasting sounds is easier than pairing many more. Now we shall try to do this – we have eight bells which are apparently identical; we mix them and hunt for their partners. The white bells are the points of reference; we touch them as lightly as possible and try to stop the vibrations at once. This is also a movement, is it not? And a controlled movement – the sound must be clear.

We must tap the bells low near the rim. This is the exercise of pairing. It is easy to remember this series of sounds, but it is difficult to localize each individual sound.

Another exercise is to mix the bells and to rearrange the series. The exercise would be easier if the child took the first note as a starting point, but later the exercise should be done without such a starting point. This material is purely sensorial; we do not speak of music, but of recognizing gradations.

Now, we might introduce a third idea in this respect: not to have sounds or noise at all, to have silence. Only one thing is necessary – that there be no movement, something we all know. How many times have we not heard it said, 'There is silence, it is necessary to have silence.' But certainly, silence is a very difficult thing to accomplish, indeed impossible, because there must be an absolute lack of movement.

However, there can be grades of silence just as there are grades of sound and noises. In silence, the final aim is the maximum silence which can be obtained. For example, in a class or a gathering where there are many people, by being still, little by little, they provoke a silence which becomes deeper the more the people persuade themselves to control all their movements. This is a thing which many people, particularly children, cannot do.

Yet small children are able to inhibit all their movements when they have already had an education of the movements themselves, and the education which we have given in controlling movements prepares them for this last step.

The most difficult thing, as teachers know, is not to move. It is more difficult not to move than to move well; for this reason, children must have much practice in moving well and in controlling their motions before exercising the will to successfully inhibit every voluntary movement. When this is accomplished, all of the noises of children or of people gathered together exist no longer. At first, there seems to be silence, but then little by little

[1] Evidently, the set of bells referenced here was a model or sample that did not isolate only the pitch because the size of the bells varied. Montessori also references the "real" material in which the bells are not outwardly varied in size or thickness.

we become aware that there is no silence, because once the loud noises are hushed, the soft noises begin, and if we abolished these, there would be others even finer. In this manner, there is a type of acute awareness which follows the finer grades of silence. Thus, there are far noises and near ones; we can abolish those near but not those far. In the city, there are mostly loud noises, but in the country, there are soft and far away noises – a bird flying. Here in this room for instance, if we were silent, we would gradually start hearing the soft ticking of a watch. An interest results to discover sounds which generally we do not perceive in everyday life, and it would almost seem as if we put to our ears a microscope, whose lens enables us to see things that are imperceptible to the naked eye. It is as if we put on the ear a sort of "lens of silence" which makes it easy to discover things to which otherwise we might not pay any attention. Children are so sensitive to this that many times I have found children of two years trying to find more "secret" noises by being silent.

The child loves silence for itself. However, there is even more to it. Silence, the immovable being, prepares the soul for something else; by achieving silence we undergo a change. It certainly is not an acquisition of knowledge; it is an external state which acts upon an internal state. All thinkers and mystics have sought silence because it predisposes one to an interior attitude, much as a beautiful environment with light, colour, and perfume can influence internal inspiration. Silence, above all, is that which gives us the surprise of possessing within us something which we did not know we had, and the little child feels this interior life because he is the interior being par excellence. Without doubt the child who feels it is no longer the same child, but a soul striving for something.

The satisfaction we give to this state of the soul is to call by name the child who is waiting, and he comes to us. We call them all and they all come to us one by one; they move themselves, get up and come, seeking to make the least noise possible. The child who waits and hears himself called has accomplished a kind of cycle of satisfaction; he comes walking quietly on tiptoe so as not to make a noise. The teacher must call all the children who are in silence by name, one after the other, without forgetting anyone, because we cannot make a soul remain in anxiety to be called and then not call it; who is last and has waited the longest must be truly satisfied.

It is cruel to ask of the children to put all their efforts and energies to this exercise, and then leave them disappointed; as if the teacher did not believe that in the soul there is a need to which it is our duty to respond. Therefore, we must call all the children who are waiting. The voice of the teacher must not disturb, it must be a voice without sound, a voice which is difficult to hear and one must be in silence to hear it. The teacher must practice saying the names of the children with her voice, pitching it in the most indistinct manner possible. When someone visits one of our schools and sees the silence exercise, he thinks that the teacher is in silence and asks himself, for what reason certain children get up and go to the teacher and only those children and not others. The visitor hears nothing, but the child who is in suspense hears the voice which calls his name, even from afar, thus stretching out the syllables the children hear as if it were a voice from far away which calls them.

It is not the movement of the lips which reveals to the child his name pronounced without sound, indeed the teacher should put herself behind the children, or outside the room in such a way that she is not seen. Often the children, to abandon themselves to this delight, close their eyes, because they are accustomed to blindfolding their eyes in order to better perceive sensations. Closing of the eyes accentuates the hearing, and we see children closing the eyes to more purely hear the voice. Thus, this exercise and others bring little by little, discipline, composed of calmness and interior beatitude.

A NAMTA Legacy

A TRIBUTE TO DAVID KAHN

John McNamara

NAMTA – AMI LEGACY: WINDOWS OF CHANGE 1975 – 2020

David Kahn

A Tribute: David Kahn

The NAMTA-AMI legacy would not be complete without recognizing the impact David Kahn has had on NAMTA and Montessori. Probably no individual has had a greater impact, through his work as Executive Director of NAMTA, on growing and deepening our understanding of Montessori.

I first met David when he knocked on my apartment door in Bergamo, Italy in September of 1971. We were both embarking on a year's study at the International Center for Montessori Studies. This year of study, under the tutelage of Camillo Grazzini, changed our lives. Studying with David that year gave me my first glimpse into David's deep passion to truly understand Maria Montessori's philosophy of education and to help others come to the same understanding. For the last fifty years, I have observed, with amazement, David's contributions to Montessori, not just in the United States, but throughout the world.

His contributions initially began in 1975 when, following in the footsteps of Carol Alver and Sanford Jones, he became the Executive Director of NAMTA. David, with the help of a dedicated board of trustees, developed NAMTA into an organization that has allowed teachers, parents, administrators, and outside experts to develop much deeper understandings of Montessori.

He accomplished this in a number of ways. He started the NAMTA Journal in 1975, the NAMTA Media Center in 1980, and planned content, speakers, and hosted four to five Montessori conferences a year.

The conferences, over the years brought together Montessori trainers (I think that, at one time or another, all Montessori trainers have spoken at a NAMTA conference), Montessori Guides, parents, administrators, and outside experts. The work of many of these experts (for example, David Orr, Mihaly Csikszentmihalyi, John Wyatt) were intro-

duced to the Montessori community for the first time at these conferences. Having these conferences regionally made it easier for people to attend and provided regional support to many. Not only did these conferences provide professional help, but also served as social occasions to such an extent that teachers would return year after year. At these conferences David always served as a friendly host who made everybody feel welcome and an integral part of the conference.

The NAMTA journals allowed David to bring the wisdom of the Montessori trainers, outside experts, and Montessori Guides to the wider Montessori community. Through the journals David provided insight and helped develop and grow much that we take for granted today (All Day Montessori, Montessori in the Public Sector, Montessori in the Home, Montessori Elementary, Montessori Adolescence, and Whole School Montessori). In addition to publishing the journals David also contributed insightful articles for almost every issue. I am sure we all have our favorite journals. My favorite is the Winter 2004 issue: Camillo Grazzini: Celebrating Fifty Years of Montessori Service

In addition to the NAMTA journals, NAMTA with David as editor published standalone publications to aid schools and teachers. 'A Montessori Operations Handbook for Teachers and Administrators', 'The Whole-School Montessori Handbook', and 'Implementing Montessori in The Public Sector' are just a few examples.

Through conferences and journals David helped us all expand our understanding of all the planes of development. We think of David today as the leading pioneer in adolescent education. However, he was also the pioneer in much of the areas mentioned previously. For example, he not only expanded our understanding of the second plane he really helped the growth of elementary. He, with Kay Baker as trainer, developed the first AMI approved summer elementary training program which made elementary training much more accessible to aspiring teachers. He was the founder and administrative director of the Ohio Montessori Training Institute. He facilitated the joint management of Washington Montessori Institute and the Ohio Montessori Training Institute. In this capacity he was instrumental in facilitating the move of the Washington Montessori Institute to Loyola of Maryland.

After founding the NAMTA Media Center in 1980 he produced over thirty videos, in part, to help Montessori Schools promote and explain Montessori philosophy. I believe that "A Child's Home Environment" in 1980 was his first. These videos truly covered all aspects of Montessori. Some examples are as follows: "Five Going on Six, Montessori Style," "Montessori Under Three," "Montessori for The Urban Child," "Why Montessori Elementary," "The Child in Nature."

David also developed the International traveling exhibit, "A Montessori Journey 1907-2007" which is now permanently housed at the International Montessori Museum in St. Paul, Minnesota. He also designed the panel exhibit, "Pathways to Peace: Montessori for Social Change," for the International Montessori Congress, Prague.

He helped develop the "Keepers of Alexandria," a Latin and history workshop and tool kit which is now housed at the University of Hartford.

An example of David's determination and refusal to think that anything is impossible is exemplified by his pioneer work in adolescent education. In the Summer Issue (1993) of the NAMTA journal he published an article "The Adolescent and The Future" by Margaret Stephenson in which she said that "as for the third plane: attempts have been made through the years to set up alternative programs…But nowhere in the world has Dr. Montessori's vision for the adolescent been carried into practice." She also wrote: "If Dr. Montessori was right about the first and second planes, it is conceivable that she could also be right about the third. Any valid study leading to work with adolescents must take this for granted; otherwise, as has happened only too often, and is unfortunately still happening in Children's Houses and elementary classes, the results are not what they should be, because the formula has been changed."

In the same journal David wrote an article, "Montessori Adolescent Education: Toward an Emerging Framework" in which he wrote about possible future steps that need to be taken in Montessori adolescent education.

In September, 1996 David organized and hosted the First International Adolescent Colloquium which brought together AMI trainers (Camillo Grazzini, Margaret Stephenson, Kay Baker, Allyn Travis, Joen Bettmann, Monte Kenison, Peter Gebhardt-Seele, Renilde Montessori, and Jenny Hoglund) and Montessori practitioners. Without David's perseverance and optimism this Colloquium, which started the Erdkinder ball rolling as witnessed by Renilde Montessori's closing remarks "This morning I had this awful feeling that you don't want an Erdkinder environment, because there are so many buts and so many questions about how to start. But from what I've seen here, I think we are absolutely on the verge of starting…. I think that you are going to create a beautiful Erdkinder much, much sooner than you think," may never have happened.

He went on to be the Founding Director of the NAMTA Center for Montessori Adolescent Studies which served approximately fifty teachers a year through an annual five week summer teacher development program 'A Montessori Orientation to Adolescent Studies." He organized and facilitated four additional International Montessori Adolescent Colloquia. He oversaw committees charged with developing Montessori-specific adolescent curricula in all subject areas. In addition, he was the founding program director, Hershey Montessori Farm School in Huntsburg, Ohio.

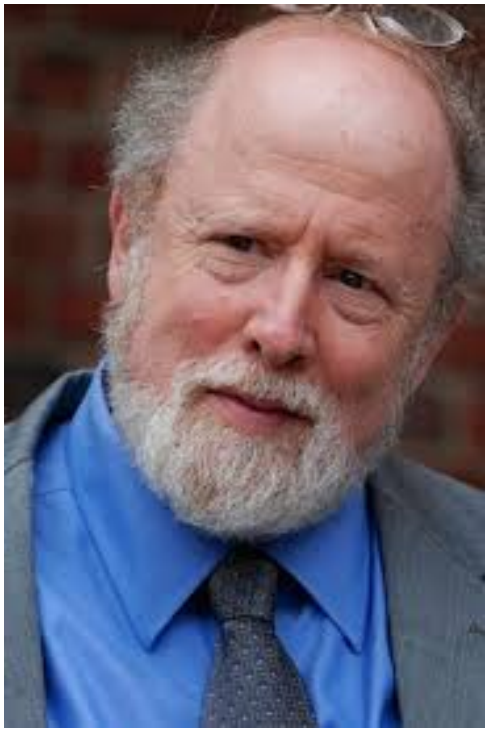
We, the Montessori community, owe a real debt of gratitude to David's contributions. I often wonder where not only I, but the whole Montessori community, would be without David Kahn's contributions.

Thank you, David.

John McNamara

John McNamara *founded the Montessori adolescent program at Ruffing Montessori School West (Rocky River, OH) in 1976, where he serves as head of school and teaches middle school, emphasizing a student-centered approach. He is a director of Project 2021. He holds the AMI elementary diploma from Bergamo, Italy.*

NAMTA–AMI Legacy: Windows of Change 1975-2020



David Kahn, Executive Director of North American Montessori Teachers' Association and Montessori Development Partnerships. David Kahn has served as a director for various non-profit Montessori management organizations over the last 40 years. He has 17 years of Montessori teaching experience, 12 of them as teaching principal at Ruffing Montessori School (Cleveland Heights, OH). Mr. Kahn was founding director of the Hershey Montessori School's Adolescent Community in Huntsburg, OH, an internationally acclaimed Montessori farm school model for adolescent education. He also serves as founding director emeritus of Montessori High School at University Circle (Cleveland, OH), which has quickly emerged as another program exemplar. David developed the summer training in-

stitute, The AMI Montessori Orientation to Adolescent Studies, to guide and develop teachers who work with students ages 12-18. An outgrowth of that program, David is internationally recognized as the leading consultant to schools that are beginning Montessori farm schools or high schools.

Mr. Kahn holds a BA in fine arts and classics from the University of Notre Dame (IN) as well as the AMI Montessori elementary diploma from Bergamo, Italy. He has utilized his film and writing skills to create the largest global Montessori media organization that documents Montessori innovation and implementation in both the public and private sectors through video and publications. He has created two major museum exhibits that have accented the social and ecological directions of the Montessori movement.

NAMTA–AMI Legacy: Windows of Change 1975-2020

David Kahn

Can it be—the closure of the *NAMTA Journal* in 2021? The NAMTA officers asked me, as the founding editor, to write about NAMTA's sustained legacy readership.

The AMI professional development system, in its early stage, had established an evolved, coherent, and consistent Montessori face-to-face delivery to the NAMTA membership. To support this effort and create a legacy, readers needed to be provided with relevant journals of authentic "legacy lore".

NAMTA publications charged the Montessori profession to expand its responsibilities. The comprehensive nature of Montessori's visionary text spoke over fifty years of publishing three to four NAMTA journals annually. In addition to these practical handbooks for Montessori comprehensive school management, NAMTA held conferences throughout geographic regions, held three major visual exhibits, and created more than thirty videos. Such rich activities fueled the needs of schools and staff to educate parents at each stage of development. This rising passion and creative expression connect to a diversity of settings for thinking across planes of development on still more themes: methodology, psychology, anthropology, the formal academic disciplines, history, world peace. Each area of knowledge stimulated more experimentation—more variations on different Montessori visions—always discoveries to be made. Legacy over time emerges as the universal laws of childhood add a wider scope of interpretation and implementation.

Montessori's legacy was informed by a rich intellectual heritage—Italian mentors in her early work in science, medicine, and anthropology; French doctors Jean-Marc-Gaspard Itard and Edouard Seguin, who initially inspired her pedagogical direction; philo-

sophical study in humanism, Ancient Greek philosophy, and German classicism; and her internment in India, where she was exposed to eastern traditions. Many of Montessori's ideas appear aligned with existing leadership theories, yet by placing the child at the center of all human endeavor, she also challenges our existing perspectives. Her body of work addresses broad social themes of human development and peace, as well as universalities and contextualities. Her view of education was not episodic, but broad and lifelong; not merely transmission of culture, but a help to life in all its aspects.

Inspired by this legacy, NAMTA has also celebrated a broad range of non-traditionally Montessori voices and invited them into the conversation, through publication and speakers. Collaborators of spirit, vision, and scholarship, these voices – such as John Wyatt, Jerome Bruner, Mihaly Csikszentmihalyi, Thomas Berry, Louise Chawla – have enriched the conversation and practice of Montessori's work. NAMTA supports the continued conversation, the refinement of the work, and the personal and organizational growth not only through a continued return to the original minders of the Montessori legacy, but through the inclusion of other sources of science, observation, wisdom, and love.

So what is legacy?

David Suzuki, geneticist and world leader in sustainable ecology, defines the longevity of the legacy, especially for environmentalists like himself who are looking at the consequences of nature's laws. Suzuki writes the following in his book, a retrospective.

The Legacy
David Suzuki

> Drawing on our experience and knowledge, *we dreamed of our place in the world and imagined the future into being*. By inventing a future, we could look ahead and see where dangers and opportunities lay and recognize that our actions would have consequences in that future that gave us a leg up and brought us into a position of dominance.
>
> Our creation stories and origin myths provided answers to those eternal fireside questions. Distilled from generations of observation and insight,

> they were carefully nurtured and handed on to those who followed, providing meaning and insight into their lives.
>
> David Suzuki, *The Legacy: An Elder's Vision for Our Sustainable Future*, Vancouver: Greystone Press, p. 11 (emphasis added) 2010.

The summer 1983 issue of *The NAMTA Journal* introduced the label "philosopher trainer," later to be called legacy trainer. The editorial conveyed a sense of loss with the deaths of prominent Montessorians: Abs Joosten, Lena Wikramaratne, and Mario Montessori. These principal actors formed an inspired Montessori team performance. Their personal commitment to Montessori was sacrificial. They saw the whole of Montessori's work and devoted their lives to the integration of Montessori principles with the training of teachers. No one knows how they caught the faith, but their styles of presentation were that of creative inspiration. They operated from a humanistic pursuit of an ideal. They had the mark of a higher consciousness. (Kahn, p. 31).

Those Montessori legacy trainers pointed the way for others to hold the Montessori mission close to their heart. Their minds were living archives and when they died, a piece of the Montessori legacy left with them. They were imbued with a pure understanding of Montessori's connected spiritual vision which comes before all other details. By contrast, a Montessori researcher and objective scholar can document deeply, whereas the trainer found Maria Montessori's own personal comprehension with their reverence for her primary sources; these great teachers inspired deeply and echo legacy through their complete published literature.

Not to be provocative or omniscient, I speak as someone who has had the privilege of benefitting from the wisdom of many Montessori legacy trainers throughout my long publishing career. We all have our torch bearers for Montessori vision, their leadership in the field, and their willingness to examine and reexamine. Now, four or five generations of Montessorians—first generation pioneers, innovators, implementors for three planes, and newly trained have all been guided by in part by this legacy.

NAMTA: A Retrospective

Montessori schools have a bounty to harvest through data accumulated by *NAMTA* Journal back issues. Areas to explore include parent-school relationships, activism, lifelong chronology of work, tradition, character, creative vision, normalization, flow, valorization, and engagement. All of these characteristics have global breadth, human understanding, and unified inventive high points leading the charge for innovation. The expanding classic Montessori principles are influencing modern adaptations. Montessori's focus on social change and peace provides context and cultivation for the classroom with a central identification of the human condition. The Montessori Journey leads to higher consciousness.

Let's "plant the seeds" by beginning with the first three *NAMTA Journals*, a flashback looking forward. The first issue of the *NAMTA Quarterly* centered around the daycare debate, the contemporary idea of all-day care. This was followed by "The Child in Nature" which introduced the elementary years, the child's experience-based learning in nature.

The Montessori Social Question

NAMTA Quarterly, Volume 1, Number 1, 1975

The *NAMTA Quarterly* conveyed Montessori's social reform approach. It looked to enhance parents' and teachers' awareness of children's needs in setting up daycare environments. Dr. Herbert Ratner, Oak Park, Illinois, Health Commissioner and a proponent of Montessori education, inspired the first *NAMTA Quarterly* entitled "Day Care and the Montessori Experience". This premiere issue was greeted with high interest from Montessori child advocates who were opposing adverse conditions in underfunded daycare programs. Some Montessori schools were more like custodial all-day programs, not optimal environments. They had no outdoor environments and untrained "babysitters" setting up a daily "deep freeze" after school in bare, non-Montessori classroom spaces. I remember AMI legacy trainer Lena Wikramaratne protesting, "Is daycare a justifiable compromise for Montessorians? If God had intended group day care for children, they would have been born in litters."

In the same first journal, Margaret Stephenson reminisced of a daycare in England during World War II. She described a small all-day care center that operated in a country home in the village of Boxmoor, about one hour north of London. This center was a refuge from the city bombings. Stephenson suggested that full-day home settings were more helpful than the half-day model which cut activities short and robbed children of their natural rhythms (p.6).

The Future of Montessori Elementary

NAMTA Quarterly, Volume 1, Number 2, 1975

When this second volume was issued, I was completing my third year of teaching Montessori elementary. I wanted to unpack the cosmic view with gusto for myself and others and I began with Montessori's words:

> ... would like to help the child to reach loftier conceptions. What must first be understood is our aim, which is to follow as nearly as possible… the needs of growth and of life… To present detached notions is to bring confusion. We need to determine the bonds that exist between them.
>
> Then, by determining the correlation between things with the child, and thereby obeying an essential impulse of the human mind, we create a philosophy for him. And why may not the child philosophize? (*From Childhood to Adolescence*, Montessori Series, Volume 12, Amsterdam: Montessori-Pierson Publishing Company, 2007, p. 58)

I continue:

Philosophy—the examined life, the spreading tree of ideas are keys that open our eyes to all fauna, flora, geography, and how they make the world productive and collaborative.

We have an integrated curriculum which deals not with mere subjects of learning but rather selects for the child's environment a living model for study—the universe, the oceans, the continents, the polar regions, different cultures, etc. The unity of the curricular approach is derived from the scientific order which explains the working parts of our place. This order is relatively constant. We give the child a concept of the earth as a whole

using a grandiose hypothesis of the earth's formation, which in turn sets off science: paleontology, botany, minerology, geology, physics, chemistry, etc. (Kahn, p.3)

The cosmic view was cause for celebration, as it sang out from my elementary Bergamo training in our imaginations and our children's imaginations, as Mario Montessori said, "sowing life, not theories." Camillo Grazzini wrote, "Ours is a great work, not for wages, but for the fullest participation in a balanced life of vision and knowledge. This is what we need to create in ourselves—the pursuit of the highest educational ideals" ("An Interview with Camillo Grazzini, Celebrating Fifty Years of Montessori," *NAMTA Journal*, Volume 29, Winter 2004, p. 24).

Part of Montessori's vision of complexity is derived from her medical and biological background. The study of evolution of life on earth is a positive verticality. Transcendence means going up and beyond material goals and concerns. What happens with the transformation of the self as the child grows up? Montessori engages teachers, children, researchers, and administrators to observe these passages.

A great historian who profoundly influenced the elementary and adolescent history fields was a Beloit and University of Chicago classics professor, John Wyatt. He spoke with passion about Montessori's philosophy of history, grammar, Latin, and philosophy so the student engaged in the "accursed questions," questions of interpretation of astronomy, mathematics, and history.

History: In General and in Particular
John Wyatt

> Aristotle, in the beginning of the Metaphysics, says that all knowledge begins in wonder. And it might be added that for Aristotle, all knowledge also ends in wonder, if one is dealing with true knowledge. In view of the above brief introduction, what about history? How does what is currently understood as "history" in academic circles fit into developing the knowledge of the past to play a major role in fostering the human potential? Obviously, a child should not be set free in life as a historical orphan, or at

least Maria Montessori thinks so. She indicates that what might be considered "to be rooted" is the most important and least recognized need of the human potential (*From Childhood to Adolescence*, 64). In some sense, for a human being to be "unrooted" suggests that such a creature lives in a continual present.

Montessori High School at University Circle, 2014, John A. Wyatt Center for Humanities and Peace, Publication, 2014.

Montessori: The Spiritual Question

NAMTA Quarterly, Volume 1, Number 3, 1976

Cosmic education considers more than the expansive mind of the elementary child. Sophia Cavalletti - Roman Catholic, Hebrew scholar, and developer of the Catechesis of the Good Shepherd - recognized the deeply spiritual nature of children.

Montessori writes about a link between science and religion in *To Educate the Human Potential:*

> This plan of cosmic education as a foundation stone of the Advanced Method was first explained in England in 1935 and it has already proved itself to be the only path on which our feet can firmly tread in further educational research. It cannot be used with the wholly illiterate or ignorant, but it is received with joy by the child who had indirectly been prepared for it in the Montessori School. Truly it is no new idea, for it has been the natural plan wherever there has been education in the real sense of the word, though lately fallen into disuse, for children first to be taught the creation of the world and man's place in it, so far as these questions could be answered in the light of religion and philosophy. The answer was ever what it still is, "God has set you upon the earth to work and do your duty!" This principle can now, however be developed on a scientific plan, and be made far more attractive. **(***To Educate the Human Potential,* Montessori Series, Volume 6, Amsterdam: Montessori-Pierson Publishing Company, 2007, p. 7)

The strong spiritual leadership of Sofia Cavalletti for over 58 years found integration and viability within the core legacy of Montessori's cosmic view. She brought an essential whole

picture of what every human needs for stability and for the contributions they will be asked to make within the coordinates of time and place—the very coordinates of history as shown by the Needs of Humans. Cavalletti knew the centrality of her work. Our search for spiritual balance in the growing child means that we can't afford to keep Cavalletti's orientation on the margins—history is our teacher. The future needs of educational reform will reveal the role the Catechesis will play in understanding the whole of humanity for what Jung says is missing—peace, harmony, and rational organization.

In 1972 Bergamo invited Cavalletti to speak to the elementary course. The Bergamo course assistant brought her son to meet Sofia and hear the story of The Good Shepherd. Johnny listened with deep focus. "The Good Shepherd knows each of his sheep by name."

Education to Wonder
Sofia Cavalletti

> Man's capacity for wonder is at the source of activities, such as the ability to observe, experiment and classify experience and information; to express himself and to listen, in the course of a discussion; to train his faculty for systematic doubt; to read—a never ending exercise; to question the world in ways combining the scientific and poetical frames of mind.
>
> If we were to better clarify the nature of the stimulus man receives from wonder, perhaps we could compare it to a magnet. The nature of wonder is not a force that pushes us passively from behind; it is situated ahead of us and attracts us with irresistible force toward the object of our astonishment; it makes us advance toward it, filled with enchantment.
>
> Wonder is a dynamic value; nevertheless it does not drive us to activism but draws us to activity, to an activity we do as persons immersed in the contemplation of something that exceeds us. Maybe the particularity of wonder is that we find activity and contemplation inseparably blended within it.
>
> […] Wonder is a very serious thing that, rather than leading us away from reality, can arise only from an attentive education that helps us to go always more deeply into reality. If we skim over things we will never be surprised

by them. Wonder is not an emotion of superficial people; it strikes root only in the person whose mind is able to settle and rest in things, in the person who is capable of stopping and looking. It is only through a continued and profound observation of reality that we become conscious of its many aspects, of the secrets and mysteries it contains. Openness to reality and openness to wonder proceed at the same pace: As we gradually enter into what is real, our eyes will come to see it as more and more charged with marvels, and wonder will become a habit of our spirit.

AA.VV. *Learning to Be* (Paris: UNESCO Press, 1972), p. 155.
Sofia Cavalletti, *The Religious Potential of the Child*, New York: Paulist Press, 1983, pp. 138–39

The Montessori Erdkinder Experiment
NAMTA Quarterly, Volume 3, Number 1, 1978

Written in 1978, 22 years before the opening of the Ohio Hershey Erdkinder, this Journal brings out the dream of Erdkinder.

Through the Magic Lantern: The Montessori Erdkinder
David Kahn

The myth of the Erdkinder is born of the myth of total education. We do not have in full practice total education. We do not have in full practice the Erdkinder. But for total education Montessorians project an education for life, an education which extends from birth to adulthood meeting not only academic needs, but the physical and psychological needs relative to every phase of growth. The Montessori language is just that magical and ambitious. And because we deal in what is a creative psychological vision, our images flicker like the magic lantern. The Montessori *savant* knows that the Erdkinder is highly experimental, but it does have an inner logic, scientific lucidity, and external appeal which shouts to be realized – like an unfinished sculpture trapped within a marble prism.

The magic lantern is a precursor of the cinema. It is part of an ideal which took nearly a century to evolve to the audio-visual technical cinema we know today. André Bazin talked about the origins of the cinema and the process whereby dream becomes a reality.

> *Thus the myth of Icarus had to wait on the internal combustion engine before descending from the platonic heavens. But it had dwelt in the soul of everyman since he first thought about the birds.*
>
> The myth of the Montessori Erdkinder will have to wait too. It needs development. It is part of a dream, a practical idea given to the life of the human species and his values. The underlying ambition is to coordinate a school from infancy to maturity supporting human growth, the growth of children as a unity which passes through interdependent stages of life. In order to sharpen our image of the Erdkinder, we must briefly summarize the dynamic principles which Montessori derived in explaining educational development from birth to adulthood.
>
> David Kahn, "Through the Magic Lantern: The Montessori Erdkinder," *The NAMTA Quarterly*, Volume 3, Number 1, "The Montessori Erdkinder Experiment," Spring 1978, pp. 37–46

In 1978 there were only a handful of Montessori middle schools and no Erdkinders (full farms). I had written an article about the ideal farm school at that time. In 1996 Debbie Guren, a strong supporter and funder of Montessori projects in northeast Ohio, said, "Let's do it." The Guren family built a huge farmhouse including a big house, back house, little house barn, with some social and classroom space, an art and theater barn, a small bed-and-breakfast apartment for guests, a barn, a bicycle house, a rabbit hutch, and chicken barn. We had a plexiglass greenhouse with a full heater and gardens, a fish aquarium, and an herbarium for plant identification and preservation.

The allure of a farm near a woodland, a wetland, and a pond with overnight quarters was a realized dream. Homemade cooking of fresh chicken, organic eggs, garden vegetables and a loving community group of happy people on land and nearby homes made the farm a real social partnership with work and study.

Normalization: Deepening the Montessori Experience
The NAMTA Journal, Volume 22, Number 2, Spring 1997

A new collaboration brought three perspectives creating legacy focus within NAMTA–AMI circles. The important partnership between Annette Haines, Mihaly Csik-

szentmihalyi, and Maria Montessori integrated an important installation for deep developmental education according to the laws of human psychology.

Montessori's ability to see the powers of the hidden, natural self, led her to characterize normality in a very different way from society's view of what is normal. The quest for normality—for the truth of human nature—was the basis of her life work. E. M. Standing chronicles her recognition of "amazing" manifestations: love of order, love of work, spontaneous concentration, attachment to reality, love of silence and of working alone, sublimation of the possessive instinct, power to act from real choice, obedience, independence and initiative, spontaneous self-discipline, and joy.

"When I see such things I think it must be the holy angels who are inspiring these children," Montessori wrote (cited in Standing, 1957/1984, p. 53). In *The Absorbent Mind,* Montessori cites normalization as *the most important single result of our whole work*" (1949/1987, p. 204, emphasis in original). It is the basic process by which the human being is "spiritually regenerated," by which the deviations of growing up fall away and what emerges is a truly "normal life" (Maria Montessori, "The Spiritual Regeneration of Man," in *Conference of Educational Associations report* of the 22nd annual conference, London: Conference of Educational Associations, 1934, p. 8).

Mihaly Csikszentmihalyi, a Hungarian – American psychologist noted for his study of flow and productivity. Dr. Csikszentmihalyi describes "flow" as a beneficial positive energy if each individual achieves an autonomous interior period of focus and concentration. The following are very humanly imaginable and concrete, rare objective descriptions of flow on the outside of self by Csikszentmihalyi.

Flow
Mihaly Csikszentmihalyi

> We have all experienced times when, instead of being buffeted by anonymous sources, we do feel in control of our actions, masters of our own fate. On the rare occasions that it happens, we feel a sense of exhilaration, a

deep sense of enjoyment that is long cherished and that becomes a landmark in memory for what life should be like.

This is what we mean by *optimal experience*. It is what the sailor holding a tight course feels when the wind whips through her hair, when the boat lunges through the waves like a colt--sails, hull, wind and sea humming a harmony that vibrates in the sailor's veins. It is what a painter feels when the colors on the canvas begin to set up a magnetic tension with each other, and a new thing, a living form, takes shape in front of the astonished creator. Or it is the feeling that a father has when his child for the first time responds to his smile. Such events do not occur only when the external conditions are favorable; however, people who have survived concentration camps or who have lived through near-fatal physical dangers often recall that in the midst of their ordeal they experienced extraordinarily rich epiphanies in response to such simple events such as hearing the song of a bird in the forest, completing a hard task, or sharing a crust of bread with a friend. […]

There is no question that to survive, and especially to survive in a complex society, it is necessary to work for external goals and to postpone immediate gratifications. But a person does not have to be turned into a puppet jerked about by social controls. The solution is to gradually become free of societal rewards and learn how to substitute for them rewards that are under one's own powers. This is not to say that we should abandon every goal endorsed by society; rather, it means that, in addition to or instead of the goals others use to bribe us with, we develop a set of our own.

The most important step in emancipating oneself from social controls is the ability to find rewards in the events of each moment. If a person learns to enjoy and find meaning in the ongoing stream of experience, in the process of living itself, the burden of social controls automatically falls from one's shoulders. Power returns to the person when rewards are no longer relegated to outside forces. It is no longer necessary to struggle for goals that always seem to recede into the future, to end each boring day with the hope that tomorrow, perhaps, something good will happen. Instead of forever straining for the tantalizing prize dangled just out of reach, one begins to harvest the genuine rewards of living. But it is not by abandoning ourselves to instinctual desires that we become free of social controls. We must also

> become independent from the dictates of the body and learn to take charge of what happens in the mind. Pain and pleasure occur in consciousness and exist only there. As long as we obey the socially conditioned stimulus-response patterns that exploit our biological inclinations, we are controlled from the outside.
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> Mihaly Csikszentmihalyi, *Flow: The Psychology of Optimal Experience,* New York: Harper & Row, 1990, p. 3, p. 19. We are grateful to Stephen Kahn who provided primary Csikszentmihalyi text above.

When looking at Csikszentmihalyi's criteria for flow, Annette Haines, with a newly acquired Ph.D., identified very strongly with doing deep research around normalization. She followed Kevin Rathunde, a research assistant for Csikszentmihalyi, examining Montessori Schools for proof of flow in the Montessori systems. Haines sought to integrate research functions with Montessori progressive theory. She was not alone at that time in the AMI trainer community.

Foundations for Montessori Reform
David Kahn

> Annette Haines bestowed the Montessori world with a precious legacy of research and documentation. She wrote about every aspect of Montessori's thought communicated by the keynote of every NAMTA Conference, from the developmental understanding of the planes of education to the universal aspects of developmental sensitivities and tendencies in all of humanity. She was seeking the root of what Montessori meant by social and educational reform reminding us of the pioneering work of bringing Montessori out from the margins of educational reform into the mainstream of traditional schools and public systems while seeking changed operations.
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> By creating a glossary of Montessori vocabulary (Glossary of Montessori Terms), Haines aided the collaboration between the academic and Montessori worlds. Seeking direct expression and using common language, she made inroads into the sociological, educational, and theory of knowledge and discipline frameworks. Montessori can be adapted for research without adapting Maria Montessori's vocabulary or modernizing her language. As Annette wrote in her glossary, "Any science has its own

vocabulary and terminology and the Montessori method is no exception. Montessorians share a very specific set of references, which are brief and succinct, yet each one evokes the world of the child as described by Maria Montessori. Montessori language acts as a password, enabling the sender and the receiver to immediately decode the message being transmitted."

In 2006 Haines became interested in the connections between Montessori and current research on the development of the brain from infancy to adulthood. When NAMTA connected Montessori's ideas on concentration, normalization, and engagement to the work of Csikszentmihalyi, Haines was asked to create a definitive, contemporary framework. This document, "Optimal Developmental Outcomes: The Social, Moral, Cognitive, and Emotional Dimensions of a Montessori Education" allowed the Montessori developmental framework to interface with the University of Chicago's psychology department through Csikszentmihalyi's theory of flow and optimal experience, which focuses on intrinsic motivation and work orientation. Prior to publication of this article, NAMTA had announced a collaboration with Csikszentmihalyi to create a definitive and contemporary view of Montessori's theories of development, including normalization. The formulation of clear developmental outcomes has had serious implications for preparing the Montessori profession to participate in both educational and psychological research. "Optimal Developmental Outcomes" combined with Haines's dissertation research opened the door for alternative assessment to be used in Montessori settings.

Annette Haines was passionate about equality of opportunity and had an opportunity to guide that process in Kansas City ("Equal Opportunity and the Montessori Magnet School"). She proposed that only a developmental approach to growth can allow for equality of opportunity. She believed that Montessori could revolutionize assumptions, values, and conventions as it expanded into the public sector. The basis for her conviction were in the worth of the individual and that Montessori models for self-discipline, meaningful work, choice, respect, and holistic psychology could aid in the development of full individual potential, which is the true meaning of equality of opportunity. She contrasted traditional schooling with the developmentally based Montessori school in clear relief.

> Annette Haines: Spokesperson for Montessori Values, Scholarship, and Research," AMI–NAMTA Journal 2017–2018 Double Issue

What is the extent of this legacy?

The emerging growth in the developmental practice for all ages and stages led NAMTA to celebrate 100 years of Montessori, the "Century of the Child." Working closely with Mary Hayes and AMI, the co-developers of the traveling exhibit, Gerard Leonard, Renee Pendleton, Megan Tyne, and I collaborated with the design team of Romana Schneider and Angela Zohlen under the supervision of the German Company VS Furniture and its director Thomas Mueller. The gathering of historic and contemporary photos and materials was a truly international endeavor. After touring seven North American cities, a purpose-built Montessori Museum was established to house the exhibit at The Montessori Center of Minnesota in Saint Paul thanks to the strenuous efforts of NAMTA officer Molly O' Shaughnessy.

The NAMTA Centenary Exhibit: A Montessori Journey 1907-2007

> The year 2007 marked a century since the first Casa dei Bambini. During that year NAMTA toured North America with a landmark exhibit, *A Montessori Journey: 1907-2007. A Montessori Journey takes the path less traveled.* The passages moved through an expanding universe of child development globally, created by a collective imagination that looks back through time and space at the sacred and unfinished Montessori liberation of the human spirit. The *Journey* is about growth, independence, stages of development, of every kind of child of every kind of color, native original and economic level from Montessori. We witness with awe and wonder children who love to find their place beside the adult in a seamless international continuum of Montessori environments that protect and nurture. Maria Montessori emerges as a persistent, yet tireless scientist in search of psychological and educational truth. This is a turning point of peak expression of AMI legacy.
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> David Kahn, A Montessori a Journal: 1907-2007, The NAMTA Journal, Volume 32. Summer, 2007. P.3.

The Montessori Legacy is 150 years in retrospect (her birthday August 31, 2020). These timeless origin stories are true and essential to Montessori's vision. The genesis of Montessori begins with the concept of the absorbent mind, its great lessons, the story of the universe, the story of life on earth, and the story of civilization. History has expressed what is needed to meet the future at the end of high school and beyond high school. Montessori will demand an in-depth framework for the psycho-disciplines. Other parts of her legacy are still in formation, the realization of the fourth plane of development, a full theory of knowledge, the practical success of universal peace, the extinction of formal learning for its own sake, etc. Montessori's diverse insights are a new genre, a vision of the montage.

The genesis of Montessori's historical narrative is not finished in 2021. As we move into the future we are still reaching into the past, revering the stories of early humans, farmers and first cities, indigenous peoples and small anthropological communities. Human origins are interconnected: one part of history gives rise to later periods dispersing other related stories which are moving closer toward the making of a grander, wider, central Montessori vision. We are evolving with the human psyche as our tool, so we can complete our human mission. Montessori finds its best impetus for the future facing the great unknown X, whether demonstrated in climate change or built into DNA research. Evolutionary information across the historical eras remains part of "the Developmental Continuum." Jerome Bruner joked that the study of primates should be done in the fourth year of elementary in which the nine-year-old children most resemble the early animal primate stage.

There is no prediction of when the Montessori culminating moment will be collectively accomplished or even projected on the developmental timeline in our present Montessori life or the future. Cosmic Education supports adolescent thinking. The third plane is beginning to reveal its data on adolescents. This is where NAMTA has made its biggest contribution. We have hardly begun the fourth plane of development, ages 18 to 24, moving toward adulthood. We have to rethink the idea of the undergraduate university scratching the surface for the next generation of realities and world challenges. This journey into higher education and the deepening of the fourth plane will be defined by a

well-being and health framework. These pathways combined with progressive thinking were needed to invent Montessori early childhood through adolescence, but now need restructuring for the undergraduate university. Humans seek a new education to imagine an international ecological cooperation. This urgency is goading education to find practical and spiritual solutions for planet earth culture.

Epilogue

The epilogue is included for John Wyatt, who died in 2008, and for NAMTA, whose Journal ended in 2021.

History: In General and in Particular

John Wyatt

> Clearly all of Montessori's writings must be taken as a whole to perceive the unity of her thought, just as what happens in the successive levels of a child's education should be a unity, one level building on another. Even though the manifestation of the human potential may be different at different ages, this potential is one. Montessori has developed a system that has its own "potency," that will be continually revealed as time goes by and generation after generation of children come into a Montessori classroom to be prepared for life and the pursuit of knowledge. The epic question that must be faced head-on by all of us left behind by her death is encapsulated in the title she gave to Chapter 18 of *To Educate the Human Potential,* namely, "Man—Whither Bound." In Latin, "*ad quendam finem"* (To what end?) was the term Aquinas used as a question to be asked in relation to any pursuit of knowledge undertaken. Aquinas adds to the text, "*Finem autem oportet esse preacognitum hominibus qui suas intentiones it actiones debent ordinare in finem,"* (It is necessary that humans know beforehand the end of an education so they might direct all their intentions and actions to that end) (1–2. q.1). Montessori's own question, "Whither Bound," is the essential question any attempt at education must confront and answer in some manner as a system of studies or experiences is selected to offer to children and adolescents anywhere and at any time. If one were into tattoos, the classy Latin line, "ad quendam finem," should be "quo tenetur".

Emily Dickinson captures the experience of a teacher desperately attempting to encounter the human potential in each child at any particular moment:

I stepped from Plank to Plank
A slow and cautious way
The Stars above my Head I felt
About my Feet the Sea.

I knew not but the next
Would be my final inch—
That gave me that precarious Gait
Some call Experience

Montessori High School at University Circle, 2014, John A. Wyatt Center for Humanities and Peace, Publication, 2014

Inch by inch, I thank all of the NAMTA Board of Trustees, especially Jacquie Maughan, for her stewardship of the media and the conferences to the very end.