Catherine Nehring Massie

Helping Children with Attentional Challenges in the Montessori Classroom: Introduction

by Catherine Nehring Massie

Catherine Nehring Massie provides important contextual information in considering children with attentional challenges. She discusses the prevalence of attentional challenges in today's culture and the contributing factors. She gives a general overview of the spectrum of attentional challenges and some of the indicators in children. Her history of Montessori and work with children facing attentional challenges provides a clearer understanding to the individual details and definitions as it builds upon years of work and observation. Critical to her article and those that follow is the link she draws between concentration (attention) and human development: "Attention lays the foundation for concentrated work—normalization of the child's personality." By partnering Montessori with medical knowledge, fostering focus and attentional development can be better achieved.

Thank you to NAMTA for inviting us to present an outline of how a medically enhanced Montessori approach may be used to strengthen the development and reduce the disability of a child with attentional challenges within an inclusive Montessori community.

Together, we present an overview of how to approach the child's challenges and challenging behaviors, and how to determine what is needed to aid their development in a significant, positive, and

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lasting way. Here you will learn how varied and complex the underlying pathologies of attentional challenges can be and the risks of misdiagnosis in terms of intervention strategies (in other words, why differential diagnosis is so essential). You will also learn how Montessori teachers can collaborate with medical professionals to meet the needs of their attention-challenged students within a Montessori environment, as well as some relatively easy tools to provide a child with help during the (sometimes lengthy) process of resource-team building, assessment and diagnosis, and intervention plan development. We provide an overview of the medical landscape around attentional challenges and outline a Montessori-based approach that stresses collaboration with medical specialists to identify and address attentional challenges to allow success for these children in a Montessori classroom.

> If anyone is able to succeed in educating the abnormal child, this would have to be based on scientific principles, as existing pedagogy is not sufficient. (Montessori, *The 1946 London Lectures* 9-10)

I will begin with some introductory remarks about the nature and importance of the faculty of attention and then will provide some historical background on medical-educational partnerships to therapeutically aid children with disabilities. Finally, I will introduce our two medical specialists who will provide important information for Montessori teachers seeking to aid the development of children with attentional challenges.

The Essential Faculty of Attention

Why is the subject of attention so timely and crucial today that it warrants an entire NAMTA conference devoted to it? We find that there are significant factors influencing today's children's attentional abilities originating from genetic, environmental, and cultural trends. Dr. Montessori, through her study and work with children with disabilities, recognized that *attention* is the prerequisite for and foundation of all learning.

> When you have solved the problem of controlling the attention of the child you have solved the entire problem of its education. (*The California Lectures of Maria Montessori* 338)

We heard from keynote speaker Annette Haines about how Montessori's educational approach is grounded in the child's ability to attend: It is the polarization of the young child's attention that builds their capacity for concentration and that leads to the phenomena she called *normalization*. And yet, as we heard from keynote speaker Maggie Jackson, today's technological culture in which many children are raised, presents a potentially dangerous assault on the development of their natural ability to attend. On top of this negative cultural influence, is the increasing number of children with attentional dysfunction stemming from neurophysiological or biochemical differences in how their brains work. Occupational therapist Barbara Luborsky and Dr. Maureen Murphy-Ryan will discuss attentional challenges from a medical perspective and how medical specialists can partner with Montessori teachers to ameliorate these challenges.

ADHD Rates Are Increasing

A recent study published in *The Journal of Clinical Psychiatry* reports a dramatic increase in the prevalence of attention deficit hyperactivity disorder (ADHD) in the United States (Collins & Cleary). A large national survey in 2011 found that 11% (revised from 12%) of children and teenagers in the United States had a diagnosis of ADHD, a prevalence rate up 42% from 2003. This increased prevalence reflects increased awareness of ADHD, better diagnosis, and the highly genetic heritability of this condition.

How many children do you have in your class who are diagnosed or at-risk for ADHD? These children are challenging Montessori teachers worldwide, not just due to increasing prevalence but also because many parents sense that a Montessori environment will be a better place for their highly active or distractible child. Unfortunately, without an understanding of these children's functional challenges and special educational needs, children with attentional challenges are often unsuccessful and unmanageable in a Montessori classroom.

Parents are too often told that their child needs "more structure" than is found in a Montessori classroom—meaning that their child needs to be in a traditional school program where children are required to sit still and attend to the words of the teacher in order to learn. Intense extrinsic motivational systems are used to

enforce compliance with attention-challenged students. A Montessori classroom, combined with the needed supports, can provide these challenging children a less restrictive educational environment where they can learn through movement and where they have the freedom to develop self-regulation skills so they can optimize their own working and intrinsic love of learning.

When Children Cannot Attend

In this workshop, you will get an understanding of the variety of causes leading to attentional dysfunction and how a diagnosis of ADHD is determined. An overview of the variety of challenging behaviors that these children exhibit will be presented along with a description of a variety of neurophysiological dysfunctions that some children struggle with daily, and the variety of detrimental, dangerous, or deadly outcomes for which these children are at-risk.

Children with attentional dysfunction can be helped to learn to concentrate, to learn compensatory strategies, to learn self-regulation, and to learn to succeed in school and in life. The particular help needed will depend on a child's unique array of neurophysiological dysfunctions, the identification of which requires a comprehensive and multidisciplinary evaluation. Our two medical presenters, Ms. Luborsky and Dr. Murphy-Ryan, will outline the role of the occupational therapist and the physician/psychiatrist in these evaluations. Additional cognitive and psychoeducational evaluations may be needed to assess for language and learning disabilities, which can present like ADHD or accompany ADHD. The comprehensive, multidisciplinary medical evaluation is essential to make a differential diagnosis, which is required to inform correct treatment interventions and effective educational accommodation.

Doctors Jean-Marc Itard, Eduoard Seguin, and Maria Montessori all confronted the sometimes nearly impenetrable wall created by inability to attend in the profoundly disabled children with whom they worked. This was the first, and probably most difficult, step in aiding a profoundly disabled child's development—the fixing of the child's attention. All three of these pioneers in special education recognized that to affix the child's attention required the use of the child's body and, in particular, the child's hands: "The hands are the instruments of man's intelligence" (*The Absorbent Mind* 27).

This principle applies to all children. Montessori applied it to her educational system to aid the development of typical children as well. In this principle, we will find powerful assistance to helping children with atypical attention.

Attentional Ability Falls along a Spectrum

There is a whole range of severity with respect to attentional challenges from mild to severe in terms of both hyperactivity and inattentiveness characteristics.

Normal Range

In the diagram on the next page, the typically developing child falls within the central range labeled *Typical*. This child is able to learn effectively in both traditional and Montessori educational settings. In the *Casa dei Bambini*, the child will develop a strong ability to attend and concentrate deeply, as this is Montessori's primary focus for this age group: normalization through concentrated work.

Mild Range

In the diagram, we see the central range expanded to include two types of children. These types are (1) a typically developing child who has been subject to negative environmental influences (family and/or cultural) and who exhibits characteristics of attention dysfunction; and (2) a child who exhibits mild attention deficits with noticeable challenges with hyperactivity and/or distractibility. These children stand out more in traditional educational settings than within the active Montessori classroom where they are allowed to move and explore.

Deviations in the attention of a typical child can often be corrected during the first plane, and this is developmental aid provided by the Montessori method with its medical roots. Because Montessori education has so many therapeutic and special education features already built in, children who are mildly deviated in attentional capacity can also become successful with little additional help. Montessori teachers generally begin to see improvement in attending and concentrating through the normalization process.

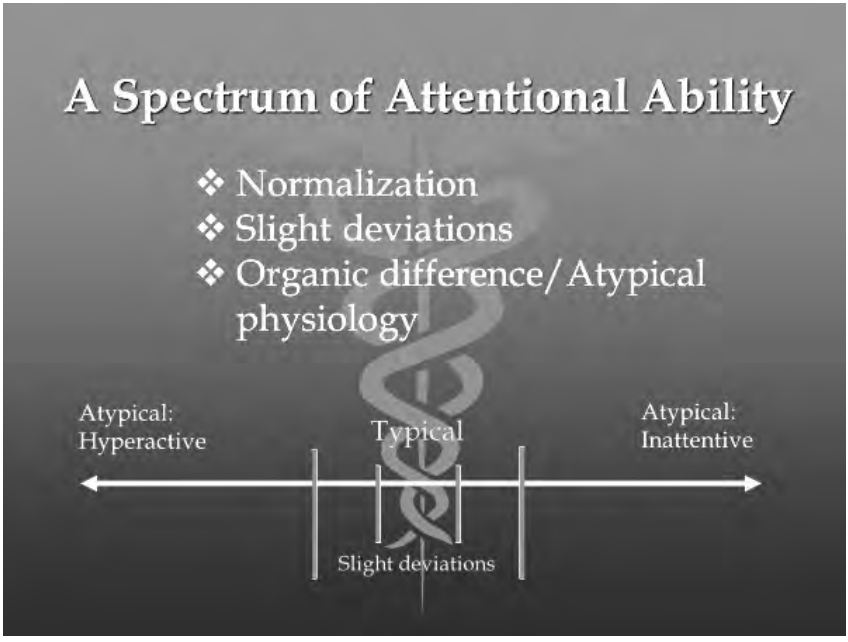
For a child who appears resistant to normalization, more observations and experimentation with supports is called for. These normalization-resistant children may actually be developmentally atypical, with neurological differences falling in the mild range. Trying out a variety of functional/educational supports (such as those in the Tools for Teachers [found in appendix B at the end of this section]) can lead to identification of strategies that improve independent functioning and improve success in the Montessori environment.

Moderate to Severe Range

Then there are children who move out along the hyperactive/inattentive spectrums and exhibit moderate to severe attentional challenges resulting from neurophysiological conditions. These children will need evaluation and varying levels of intervention and support.

What Does ADHD Look Like in a Montessori Classroom?

What behaviors do you see in your classroom indicating inattentiveness? Hyperactivity? Both?



Hyperactivity

Running. These types of children, throughout the day, often break out into running circles around the classroom, unless prevented. This is a highly stimulating and pleasurable activity for them, which quickly turns into a game of chase, if not prevented. In addition to being a challenging behavior to stop, once started it often requires at least two adults to stop it. Other children may join in this running chase game, making it even more exciting and more strongly reinforcing this behavior. Running indoors is a dangerous behavior and must be extinguished or replaced immediately.

Climbing. These children use any vertical furniture available to climb on, often damaging or breaking furniture or materials in the process. These children like to climb up shelves, climb or stand on tables and chairs, climb up the bead cabinet, and/or climb unsafely on playground equipment.

Hitting. These children are very impulsive and often do not understand personal space. They hit first and ask questions later, usually deeply regretting the results of their impulse (e.g., hurting a friend).

Talking Out. These children talk prolifically, rapidly, and simultaneously with others. They blurt out everything that comes to mind without reflection or pausing to hear the other person with whom they are in conversation. They frequently interrupt or talk aloud when the teacher is instructing.

Poor Coordination. These children frequently have noticeable gross and small motor coordination difficulties. They frequently bump into people, bump into things, drop things, spill things, break things, trip and fall, and fall off chairs. These are not intentional, for the most part, but indicative of their neurophysiological differences. Given a lot of negative attention or admonishments for these "accidents," some children will start to do these things intentionally.

Inattentive

Not Choosing Work. These children usually have a very difficult time choosing work. They often feel overwhelmed by all

the choices in a Montessori classroom. This creates a great deal of anxiety, and they fear being confronted by the adult with "choose a work," which is often followed by "or I will choose for you" and this creates even more anxiety. Anxiety, then, can become a secondary hurdle to concentrated work.

Wandering. Because making choices can be very anxiety-producing, these children may spend a lot of time wandering through the classroom. Wandering can include walking through other children's work space or stepping on their work, bumping into materials (e.g., knocking down the pink tower), stopping to watch—and sometimes interfering with—another student's work, looking out the window, daydreaming, multiple trips to the sink/restroom, or hiding in the library behind a book. Some children are not able to maintain focus long enough to choose; they simply begin thinking of something new or are attracted to something else that has caught their eye.

Looking Like They Are Working. These children become adept at pretending they are working, choosing anything off the shelf to conceal that they are not engaged in work; or some sit down to work and then lose focus and start thinking about other things. They need to be observed closely to ensure they are engaging with concentration in developmental work.

Poor Social Skills. Both hyperactive and inattentive types of children may struggle with poor social skills. These children often have poorly developed social skills because they have not been able to attend to, and therefore naturally absorb, the more subtle social conventions governing daily social life. They often do not respect (i.e., are not cognizant of) personal space, they impulsively interrupt others in conversation, they have not taken the time to interpret the body language or the perspective of the other person, and they have not observed the art of initiating social interaction, so they often use physical means.

Hyperactive and Inattentive Combined

Children who exhibit both types of behaviors described above are the most behaviorally challenging. They are often not able to function successfully in a Montessori classroom without accom-

modations, support and/or a one-on-one adult helper (preferably a behavior therapist but more commonly an untrained "shadow").

Multiple ADHD Children in One Environment?

What if there is more than one child with ADHD in a classroom? Depending on the particular children involved, this can increase the behavioral challenges exponentially. These children recognize their alikeness almost instantaneously and are attracted to each other like magnets; their energies can feed off each other and intensify. This problem is more pronounced in first-plane children, when normalization has not yet occurred. I have observed a three-year-old child sitting or working peacefully in the classroom, and then his friend (who is also impulsive) enters the environment and the instant that they make eye contact, it is like lightning bolts shoot between them, energizing them. All of a sudden, both are up and running through the classroom playing chase with the teachers, disrupting the work of all the children, and sometimes even stimulating typical children to join in the chase game. Soon five children are screaming and running circles around the teachers!

> The essence of scientific and medical pedagogy: To understand, we need medicine. To aid development, we need education.

They can be best friends and worst enemies. While these children see kindred spirits in one another and are often drawn to be friends, they also have common characteristics that antagonize each other—like impulsiveness. Disagreements, conflicts, or misunderstandings between two highly impulsive children may be frequent and can escalate rapidly and dangerously. In some cases, these electric-charged pairs may need to be placed in separate classrooms in order to be able to engage in productive activity; free play together on the playground may be all that they are able to safely handle.

Dr. Theodor Hellbrügge, creator of the first inclusive-by-design Montessori school in the world, Aktion Sonnenschein, recommended that, optimally, only one of each disability type should be included in each classroom because he observed that

children with the same disability type tended to group together and isolate themselves from the rest of the classroom community. He also recommended an optimal inclusion rate of no more than 25% children with special educations needs in a classroom. While these recommendations may represent the ideal composition of a classroom, they may not represent the reality of your classroom or of many classrooms today which have three, four, or more children with serious attentional dysfunction.

Weighing Risks and Rights

Some Montessori teachers may be wondering if they really want to have children with ADHD in their classrooms, given the challenges, risks, time, and resources involved. Depending on where you live, the answer to the question, "Why do I have to have these children in my class?" may be a legal one. The Americans with Disabilities Act (ADA) and the United Nations 2006 Convention on the Rights of Persons with Disabilities are examples of national-level and international legislation with far-reaching protections for children with disabilities. The United Nations has set a high bar internationally, with 171 countries and the EU signing their treaty on the rights of persons with disabilities (but not the United States). This UN convention requires its members to ensure that they have an inclusive educational system at all levels, that people with disabilities have the right to the full development of their potential, and that they have a right to habilitation, rehabilitation, and early diagnosis and intervention. In the United States, under the ADA, both public and private schools are required to make an effort to accommodate the needs of children with disabilities, including ADHD. Educational access is considered a civil rights issue in the United States. Educational justice means that every human being receives the help (aid) they need to get to their own unique potential.

The good news is that Montessori schools are uniquely well-suited to deliver educational justice. It *is* possible to accommodate and support the needs of a child with attentional challenges in a Montessori classroom, provided that the teacher is prepared (specialized training) and that there is a partnership with parents and medical specialists. How we do this is the subject of these papers.

A Montessori View of Attention

Montessori's experiences as a medical doctor, as a specialist in psychiatry, as an advocate and teacher of children with disabilities, and as a scientific pedagogue and observer of children, provided her with an unusually deep understanding of the importance of the faculty of attention in development and education. In particular, her early work with children with disabilities, who generally had varying degrees of attentional dysfunction, provided her with much insight, "To study the abnormal is the best way of understanding the normal," as William James observed.

Here are some important quotes from Montessori providing essential insights into the faculty of attention and which point us in the direction of helping the child with attentional dysfunction.

Attention and Education

> The fact on which it is possible to establish my system is the psychologic fact of the 'attention' of the child intensively chained to any exterior object or fact which proves in the child a spontaneous although complex activity of its entire little personality. When you have solved the problem of controlling the attention of the child you have solved the entire problem of its education. (*The California Lectures of Maria Montessori* 338)

Attracting Versus Holding of Attention

> The way of attracting attention is the great preoccupation of all those who educate because one does not receive anything within, if one does not fix the attention upon something. There are means of attracting attention and means of holding it. These are two different things. To attract attention, some stimulus is necessary; to hold it, on the other hand, an intellectual stimulus is necessary, something (on which) the intelligence may work. (*The California Lectures of Maria Montessori* 338)

Attention Grows from Within

> In fact, in our experiment the attention of the little child was not artificially maintained by the teacher; it was an object which fixed that attention, as if it corresponded to some internal impulse; an impulse which evidently was directed solely to the things 'necessary' for its development. (*The Advanced Montessori Method* 120-121)

Importance of External Objects

> The external object is the gymnasium on which the spirit exercises itself. (*The Advanced Montessori Method* 120)

> To be able to choose objects that will interest and hold the attention of the child is to know the means of aiding it in its mental development. (*The California Lectures of Maria Montessori* 339)

Attention Requires Freedom

> Liberty is the experimental condition for studying the phenomena of the child's attention. (*The Advanced Montessori Method* 122)

> The things which are useful to our inner life are those which arouse our interest. Our internal world is created upon a selection from the external world, acquired for and in harmony with our internal activities. (*The Advanced Montessori Method* 124)

While traditional education and Montessori education both view attention with the same importance, they vary significantly in their views of how attention functions with respect to development. In traditional education, the teacher requires the attention of the student so the learning can be imparted by the teacher. The teacher must be able to get all the students sitting still, looking at her, and listening to her in order to be able to teach them. Attention in traditional school is externally demanded and directed for the teacher's purposes. Students are extrinsically manipulated through rewards and punishments to pay attention to the teacher.

In Montessori education, the child is allowed the freedom to listen to and attend to his/her internal attentional impulses. Montessori theorized that the attentional impulses of the young child were reflections of natural developmental drives during sensitive periods and that to develop normally and optimally, children needed to be left free to attend to those impulses. For the older child, following the internal attentional impulses was the basis of intrinsic motivation and love of learning. Especially for young children, Montessori observed a capacity for attention unheard of in traditional education. After long periods of internally driven attention to their work,

Montessori children became refreshed and happy, unlike the fatigue felt by externally prompted work in traditional classrooms.

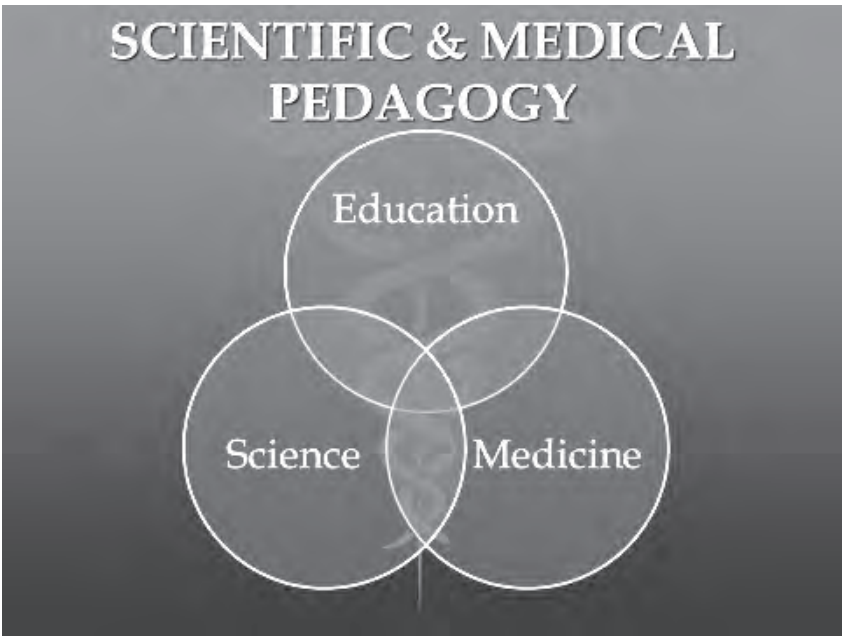
Montessori wisdom with respect to attention gives us these principles to keep in mind when working with typical and atypical children:

- Attention is not static, it grows with practice and (typically) with age.
- Attention is not just looking and listening, it requires an external object or something on which the intelligence and hands may work.
- Attention is not just sensory stimulation, it must engage the child's intellect.
- Attention can be guided by the hands. For children with severe attentional challenges, this *is the key* to progress.
- Attention lays the foundation for concentrated work: normalization of the child's personality.
- Attention that leads to concentrated work can *only* come from within.

Given these insights into what attention is and what it is not, it is easy to envision the underlying characteristics of a Montessori education. The Montessori method is perfectly designed to help children develop their attentional capacity. The next step in helping your children with attentional dysfunction is also found in the early writings of Maria Montessori—collaboration with medical specialists. It is important for Montessorians to know this history.

Historical Background to a Medically Enhanced Montessori Approach

In the collaborative medical-educational approach we are presenting, our objective is much more than just making it possible to include children with attentional dysfunction in a way that does not disrupt the Montessori classroom and diminish the experiences of other children. Our objective is to outline a partnership in which the



atypical child is evaluated comprehensively and both medical and educational interventions are tailored to the specific (and generally, multiple) challenges faced by that child for optimal effectiveness. Then the developmental power of Montessori education is enhanced by integrating, adapting, modifying, and enriching the Montessori lessons, materials, and environment to create an individualized therapeutic program to aid and optimize the development of this child. This medical-educational collaboration is the essence of scientific and medical pedagogy, and because the Montessori method is at its core, I call it a medically enhanced Montessori approach.

Medical-educational collaboration has a long, albeit largely ignored, historical tradition dating back to the beginning of the 1800s. Physicians Itard and Seguin developed educational programs to enhance the development of children with severe disabilities. Today, Itard and Seguin are hailed as the fathers of special education. Itard was chief physician at the National Institution for Deaf-Mutes in Paris and internationally famous for his documented experiment teaching Victor (the Wild Boy of Aveyron). Through his work with Victor, he discovered that sensory training could be used to stimu-

late cognitive development. Initially an assistant to Itard, Seguin went on to spend his life developing a comprehensive program to significantly aid the development of the most developmentally disabled children (IQ < 30), a method that he called *physiological education*. He added intensive large and small motor training to the sensory training exercises as well as movement to music. Montessori voraciously studied the work of both of these pioneers.

> There was the possibility of educating the deficient! Why then was not this done? And I found the answer: 'Because neurotic and deficient children go into the domain of physicians, and physicians are out of the field of education.
>
> I then grasped the idea that to fortify intelligence without education was a vain task, and this is why the deficient question in medicine was the most neglected of all. Between physicians and teachers, at that time, there was an absolute separation; they never met in their social and scientific work. Consequently, I determined to get the problem of the deficient out of the field of medicine, bringing it into the educational field. (*The California Lectures of Maria Montessori* 260)

Montessori came to this revolutionary concept through her research and work in the children's ward of the psychiatric clinic in a hospital in Rome. After speaking at a teachers' convention in Turino in 1897, Montessori was given the opportunity to establish an orthophrenic school in Rome for children that were previously housed in the mental hospitals. In this very first school of its kind in Rome, Montessori also included children who were left to run the streets because they were "refractory to education for insufficient mental qualities" (*The California Lectures of Maria Montessori* 261). Talk about a challenging population of children! Starting with Seguin's methods and experimentally modifying and creating new materials and methods to educate these children, Montessori became internationally famous for her results, which were hailed as nothing short of miraculous.

A hundred years ago in Rome, children with disabilities were excluded from school and kept in the arena of medicine, while children who were "refractory to education for insufficient mental qualities" (*The California Lectures of Maria Montessori* 261)—such

as children with ADHD—were just left to run the streets. Today, in the United States, we have inclusion of both of these groups of children into the domain of education, but where are the medical professionals? Teachers generally are not supported with the medical science and support services they need to aid the development of these challenging children. Montessori was both a physician and educator (self-taught like Itard and Seguin), and her life's work was the result of a fusion of these two professions—she called it *scientific pedagogy*.

Montessori's son, Mario Montessori, was also a passionate advocate for children with disabilities—just like his mother. In the 1960s, Mario collaborated with two renowned pediatricians: Dr. William Argy, professor emeritus at Georgetown University Medical School in Washington, DC, and medical director of the DC Society for Crippled Children; and Dr. Theodor Hellbrügge, world-renowned pediatrician and pioneering medical researcher, founder of Aktion Sonnenschein (Project Sunshine, the first inclusion-by-design Montessori School) in Munich, and vice-president of Association Montessori International. Through these two pioneering partnerships, on different continents, Mario Montessori labored to reconnect his mother's work in education—scientific pedagogy—with current practices in the medical community in service of children with disabilities. In Munich, this work was named *medical pedagogy*. Today, a physician in Germany can write a prescription for a child to receive a medical service called, *Montessori therapy*. Montessori therapy is the practice of Montessori medical pedagogy; it is called *medical pedagogy* because Montessori's method is reunited with the medical sciences to create therapeutic interventions, raising the developmental path of a child with a disability to a higher level. It can be thought of as early intervention utilizing the developmental approach of Montessori.

Today, neuroscientists and medical practitioners can understand a tremendous amount about the intricate workings of human neurology and physiology and the causes of behaviors, but it is the teacher (a scientific pedagogue, as envisioned by Montessori) empowered with medical knowledge who can strengthen, rebuild, and construct a new capacity and functioning in a growing child.

Montessori thought expansively. She viewed her work of combining medicine and education as laying the foundation for a regeneration of mankind:

> The school constitutes an immense field for research… This is the field, therefore, in which the culture of the human race can really and practically be undertaken; and a joint labour of physician and teacher will sow the seed of a future human hygiene, adapted to achieve perfection in man, both as a species and as a social unit. (*Pedagogical Anthropology* 37)

A hundred years later, we are still a long way from realizing this grand vision. To reach this vision requires an integration of medical and educational practice. Integrated practice requires the breaking down and reconfiguring of institutions. Currently, substantial barriers exist between educational institutions, medical institutions, and medical insurance institutions. While Montessori recognized that one cannot neatly divide a child into medical and educational parts, that cognitive and physiological aspects of a child are intertwined, especially during development, this revelation remains ahead of our time. Our educational institutions refuse to implicate medical issues in their students, for fear of having to pay for a service that is needed to help them succeed at school. At the same time, our medical insurance institutions avoid paying for services that are educational in nature. As a society, we need to change the way we view education and development, we need to view the mind and body as inseparable, and we need to create institutions that reflect this reality in order to aid the optimal development of the whole child.

Paradoxically, Montessori schools in the United States do not have a strong history of inclusion or of partnering with medical professionals and integrating therapeutic methods within their classrooms. In a recent survey of Montessori and non-Montessori early childhood teachers in a large Midwestern state (Danner & Fowler), Montessori teachers surveyed had less knowledge about inclusion and less special education professional development than non-Montessori teachers. Montessori teachers also had significantly fewer children identified with disabilities in their classrooms: Montessori teachers on average served two children with IEPs in

their current classrooms and almost half of the Montessori teachers surveyed had no children identified with disabilities in their current classrooms; non-Montessori teachers, on the other hand, served on average eight children with IEPs in their classrooms. Montessori teachers also reported, on average, only a couple of disability types (predominantly speech and language impairments) represented in their classrooms, compared with non-Montessori teachers who had 4-5 disability types in their classrooms. Despite the strong link between special education and the Montessori method, the Montessori teachers surveyed have less knowledge, training and experience working with children with disabilities.

Montessori teachers are perfectly poised and trained as scientific pedagogues and equipped with Montessori's method and materials of development to cross the institutional divide and enter into the arena of the medical sciences. Make friends with physicians and therapists—you have much in common. Montessori education and medicine both share the same foundation: the scientific method. Partner with medical specialists in discovering the neurophysiological basis of a child's challenges in your Montessori environment. Observe together, share perspectives, share tools and resources, and collaborate in building therapeutic and supportive accommodations and modifications integrated with the Montessori curriculum so that the child can experience success.

What it means to be a scientific pedagogue:

- Follow the needs of the child, not just the choices of the child.
- Observe with medically trained eyes in order to know the child.
- Make modifications, adaptations, enhancements, and extensions to the
    - method of presentation,
    - materials, and
    - environment.

What is the first step in helping your student with attentional challenges? Get to know him/her *thoroughly:* "... we cannot educate anyone until we know him thoroughly" (*Pedagogical Anthropology 17*)

To a physician, this is what is needed to get to know the child:

- Observation
- Evaluation
- Diagnosis
- Differential diagnosis

We cannot effectively help until we know the cause of the child's challenges. Luborsky and Murphy-Ryan will both explain the importance of differential diagnosis and the repercussions of not determining root causes for attention challenges. It is this knowledge that drives scientifically and medically based interventions. But there is another kind of "knowing" a person with a disability, which must also be kept in mind if we are trying to help that person succeed: It is knowing what it is like for a person with that disability to function each day in our community. One cannot fully appreciate how impairing it can be to live with ADHD without having it or having lived with a person who struggles daily with this condition; the more one can understand their inner life and daily struggles of individuals with ADHD, the more one will know what is needed to help.

With this in mind, getting to know what life with ADHD is like, I decided to interview young adults and not so young adults with a diagnosis of ADHD to get some first-hand accounts. What I learned was very surprising to me as well as impressive at times and tragic at times. After hearing what four adults with ADHD struggled with daily, I will never doubt that ADHD is a real disability, and I will forever admire the dauntless grit with which they keep moving forward. [See appendix D at the end of this section for insights into the lives of four adults with ADHD.]

What Is Scientific and Medical Pedagogy?

- Medical science and education inform each other, and teachers collaborate with specialists to create diagnostic and therapeutic methods that aid the development of the child with a disability.

- Montessori educational theory and practice is medically enhanced (infused with therapy objectives) to produce not just an educational but a therapeutic aid to development.

- A resource team approach is used: collaboration of the teacher, therapy providers (SLP, OT, psychologist, etc.), and doctors.

- Methods are designed based on the particular setting: clinic, specialized school or educational setting, hospital, residential facility, orphanage, home-based program, special education classroom, or inclusive general education environment.

- Methods are designed according to the individual needs of a particular child.

- Parents must be nurtured and engaged in their role to help their child.

Introduction to Our Medical Specialists

This two-part program brought Montessorians together with specialists from the medical community to broaden Montessori teachers' understanding of the variety of causes of attentional challenges faced by an increasing number of children and to outline a comprehensive approach to aiding the successful functioning of these children in Montessori classrooms and in life more generally.

Trainings in a variety of specific techniques, interventions, and supports are available, and we will identify some good ones; but whether a tool is helpful or not will depend on the underlying cause of the attention dysfunction in a particular child. This is why the partnership with medical professionals is so important: Medical

professionals must evaluate and identify the individual's diagnosis or diagnoses. The selection of tools must be based on the individual profile of the child. You will learn why one-size-fits-all approaches are a disservice to the child with attention dysfunction and, in some cases, may even be harmful.

I have the great pleasure of introducing two outstanding medical professionals: Barbara Luborsky, OTR/L, a developmental occupational therapist and owner of Way to Grow, LLC, a pediatric occupational therapy and speech clinic in Frederick, MD, and Maureen Murphy-Ryan, a graduate of Mayo Clinic Medical School pursuing research interests in medical genetics in Roanoke, VA. While these medical specialists are not Montessori trained, they have an understanding and appreciation of the medical basis of Montessori education and the benefits of Montessori education for children with atypical development of attentional capacity. These two medical professionals are here to inform you about the most current scientific understanding of the variety of causes of attentional challenges in children, and the best medical treatment options and educational supports to help your students who cannot attend.

In part one [Luborsky chapter], you will learn about attention challenges under the purview of the medical field of occupational therapy. Luborsky is a developmental occupational therapist whose work focuses on strengthening and optimizing physiological development. She was a research fellow at the Georgetown University Hospital Child Development Center and has twenty-five years of clinical practice with children. Luborsky also has extensive experience working with Montessori schools and teachers and regularly speaks at Montessori conferences. We have been working together for ten years on advancing the concept of scientific and medical pedagogy for the inclusion of children with disabilities in Montessori classrooms.

In part two [Murphy-Ryan chapter], you will learn about attentional challenges under the purview of the physician, developmental pediatrician, psychiatrist or neuropsychologist. Different medical specialists approach a child's behaviors with a different set of lenses; for this reason, it is important to have a multidisciplinary evaluation. Murphy-Ryan is a medical researcher focused on psychiatry,

genetics, and inheritability of mental illnesses. She will share with you the characteristics that constitute true ADHD, other conditions that often accompany ADHD, the risks of not treating ADHD, and the complexities of medication treatments. She will have a frank talk with you about the good and the bad regarding stimulant medications for children. (Disclosure: Maureen Murphy-Ryan, I am proud to share, is also my oldest daughter.)

This two-part [conference presentation] is about Montessori teachers building partnerships with medical professionals in order to help children with attentional challenges succeed. We will delineate the role of the occupational therapist and the role of the physician/psychiatrist in partnering with Montessori teachers to evaluate and provide aid to the development of children with atypical attention. There are four common themes in these presentations:

1. A medical-educational team approach is necessary to help children with attentional barriers. Not all of these children have ADHD.

2. There must be a differential diagnosis in order to know how to effectively help a child. Two-thirds of children with ADHD also have another psychiatric condition and one-half also have a learning disability.

3. There is no such thing as a magic cure-all pill for these children. Medications, when indicated, must be part of a larger plan involving teaching self-regulation skills and compensatory life skills.

4. A medically enhanced Montessori method offers the richest, most adaptable, educational program for aiding children with attentional dysfunction

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